Essays on the Effects of Business Group Affiliation on the International Performance of Sub-Saharan African Firms

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ABSTRACT

Essays on the Effects of Business Group Affiliation on the International Performance of Sub-Saharan African Firms

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This dissertation consists of three essays which investigate the internationalization of firms in less developed economies (LDEs), with a special focus on institutional factors and business group affiliation (BGA), as well as a study of the firms' non-market strategies in LDEs. The research setting is Sub-Saharan Africa (SSA). The unique contribution of my thesis is to more deeply explore the research agenda articulated by George and his colleagues (2016) in focusing on a prevalent and understudied organizational form in the region. BGs are widely viewed in the literature as a mechanism for closing institutional voids, developing their affiliates' capabilities through resource provision, and enabling opportunities by raising their capacities to reach international markets. I examine ethnicity as a primary axis of solidarity among BGs in SSA, and address the question of their competitive advantage from the perspective of solidarity. Lastly, the thesis seeks to contribute to the debate around the dominant non-market strategies of SSA's firms, contribution to public projects, and bribery, by drawing attention to resource dependency theory. In this study, I also examine the influence of business group affiliation on non-market strategies, and their linkage.

Dedication

This thesis is dedicated to my beloved family and parents. To my love, Maedeh, who has always been there for me since the beginning of my thesis journey, thank you for all of the beautiful memories and your continued support and encouragement. To my mom and dad, it’s impossible to sufficiently thank you for everything that you've done, from loving me unconditionally, to raising me and giving me this opportunity to be far from you, thousands of miles away, despite all of its difficulties, in order to explore and pursue my dreams.

Contribution of Authors

African Business Groups: Does Group Affiliation Improve SMEs Export Performance?

Mahdi Tajeddin: Empirical work for data collection, data analysis, writing, editing, proofing and bibliography

Michael Carney: Research supervisor, funding, writing, editing and proofing

The second chapter of my thesis was published in the Journal of Entrepreneurship Theory and Practice. In the second chapter, I argued for informal credit as a mediator, in addition to other mediators, like formal credit, skilled employees, and Information and Communications Technology, which I discussed in the published version.

Relationship between a Firm's Contribution to Public Goods and Corrupt Behavior: Evidence from Africa

Mahdi Tajeddin: Empirical work for data collection, data analysis, writing, editing, proofing and bibliography

Jisun Yu: Thesis committee, editing, and proofing

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I express my deepest gratitude to my thesis committee member, **Dr. Jisun Yu,** for her valuable guidance and constant support throughout the dissertation work. I cannot forget the treasured conversation and suggestions I received from **Dr. Mai Thi Thanh Thai**, also on my thesis committee, about my career plans and thesis.

Table of Contents

LIST OF FIGURES

LISTS OF TABLES

CHAPTER 1

1. INTRODUCTION

"All management scholars aspiring a theoretical contribution should be concerned about context (Meyer, 2015, p. 369)." While prior studies have proven useful in explaining the conditions of firms in developed economies (e.g., Witt & Redding, 2013; Hotho, 2014; Schneider & Paunescu, 2012) and certain emerging economies, such as India, China, Russia, etc., their findings are rarely well-suited for characterizing the firms in groups of developing economies and less-developed economies, particularly Sub-Saharan Africa. African scholars should exercise caution in applying theories developed in other contexts. Instead, they are better served in exploring locally relevant research issues, developing theories that explain the African phenomena. I go beyond the existing frameworks associated with developed economies and emerging economies in my dissertation, by considering unique institutional aspects, such as ethnic groups, severe resource constraints, and government, which have proven to be highly relevant to economies in Africa. A recently published editorial claims that "the greatest challenge to business in Africa stems from the persistence of institutional voids, understood as the absence of market-supporting institutions… and contract enforcement mechanisms" (George et al., 2016:377). The editorial goes on to identify three priority areas for management research in Africa, namely how firms (i) navigate institutional voids, (ii) develop their capabilities, and (iii) enable opportunities.

The significance of this dissertation is to contribute to the research agenda articulated by George and his colleagues, in focusing on the business group as a prevalent and understudied organizational form in the region, and on non-market strategies. Business groups (BGs) are widely viewed as a mechanism for closing institutional voids, developing their members'

capabilities through resource provision, and enabling opportunities by raising their capacities to reach international markets. Non-market strategies have also been recognized as a firm's efforts to tackle the constant resource scarcity it faces in developing economies, like Sub-Saharan Africa (SSA). Lacking basic infrastructure, like transportation, and having limited access to human resources and financial investment, create significant barriers to African businesses. Furthermore, in developing economies, a firms' access to critical resources tends to be heavily constrained by the power of external stakeholders, particularly the government (Shirodkar, Beddewela, & Richter, 2018; Malatesta, & Smith, 2011). Therefore, managing non-market environments is often more critical for business success than managing market environments (e.g., Hillman, & Hitt, 1999; Peng, 2003; Marquis, & Qian, 2014). Non-market strategies strengthen the firms' connection with the government, resulting in increased access to state-owned resources. Taking up the challenges posed by George and his colleagues (2016), I address three main questions in three essays, where I develop a set of hypotheses based on the noted arguments and test them by using the data from the World Bank's Enterprise Survey, comprising firms in Sub-Saharan African countries.

In the first essay, I address the pressing question of whether SSA group affiliated Small and Medium Enterprises (SMEs) can overcome the hurdle of imperfect markets to acquire the resources needed to engage in international trade. My main contribution to the literature is to demonstrate the effects of a series of mediating variables that explain the group affiliation–export intensity relationship. In this vein, I provide some answers to the question of how BGs can help their affiliates improve their performance in understudied contexts, where resources are scarce and where contract enforcement is costly. I find that BGs may compensate for institutional voids by channeling resources to BG-affiliated SMEs, helping them improve their international

performance. Further, financial, human, and technological resources mediate the intensity of the BG affiliation–export relationship.

Extending this discussion into my second essay, I examine ethnicity as a primary axis of solidarity among BGs in SSA and address the question of their competitive advantage from the perspective of solidarity. Therefore, I investigate whether the ethnicity of BGs affects the competitive advantage of their affiliations over independent firms in SSA. To address this question, I discuss the construction of market-supporting institutions in SSA and their impact on forming solidarity, defined by sociologist Emile Durkheim (1984/1983) as mechanical solidarity and organic solidarity. I find evidence of business group heterogeneity which influences their affiliates' competitiveness (as indicated by the firm's export intensity). Affiliates owned by Indian, Middle Eastern, and European entrepreneurs show no significant difference from indigenous, African owned firms. I find that Chinese owners of group affiliated firms significantly outperform both independent firms and other BG affiliates with non-Chinese owners. This work contributes to the study of BGs and internationalization literature and adds to my understanding of the origin of BG heterogeneity, as well as some of the potential sources and limits of their competitive advantage.

My third essay emphasizes the non-market strategies of firms in understudied contexts of SSA, where resource constraints are the most crucial challenge for firms, as they depend on external resources, particularly state-owned resources. This essay addresses the question of how firms employ non-market strategies in order to strengthen their political connections for accessing state-owned resources. I examine two non-market strategies in an integrative manner: contributing to public goods and engaging in corruption in the context of Sub-Saharan African firms. The results show that SSA firms contributing to public goods are involved in more corrupt activities and pay more bribes to officials, resulting in greater access to state-owned resources, as

opposed to firms that contribute to public goods in developed economies, that does not usually involve participating corrupt behaviors. I further examine the moderating effect of BGA as another external actor, which can substitute for weak infrastructure and resource scarcity in the context of less-developed economies, particularly in SSA. The findings indicate that affiliated firms budget for fewer bribes than independent firms and that this affiliation undermines the complementary effect of bribery for a firm's contributions to public goods. In other words, BGs can influence the relationship between the non-market strategies of firms, and BGs can even be considered by the firm as a substitute actor for the government in accessing resources needed for their operations.

CHAPTER 2

2. AFRICAN BUSINESS GROUPS: DOES GROUP AFFILIATION IMPROVE SMES EXPORT PERFORMANCE?

2.1.ABSTRACT

How do Sub-Saharan Africa's (SSA) small and medium-sized enterprises (SMEs) overcome the problem of market imperfections to get the resources needed for successful exporting? I hypothesize that in many emerging economies, domestically owned SMEs address the hurdle of imperfect markets by creating private governance systems in the form of long-term business relationships in business groups (BGs). My data is collected from the World Bank's Enterprise Survey and consists of some 8,885 SMEs in 33 Sub-Saharan African countries. I find that the export performance of BG affiliated SMEs is superior to independent firms, and that BGs are instrumental in mediating financial, human, and technological resources for their members.

Keywords: *Business Group Affiliation, Export Intensity, SMEs, Emerging Economies, Sub-Saharan Africa*

2.2. INTRODUCTION

It is well established that SMEs confront many hurdles accessing international markets. Lacking the resources, scale, and the types of organizational capabilities that enable internationalization, a large body of research has examined the role of networks in facilitating SMEs access to international markets (Mesquita & Lazzarini, 2008). Researchers have identified prominent examples of such networks including social networks that promote opportunity recognition (Coviello, 2006; Ellis, 2011), and global value chains and industrial clusters that help SMEs upgrade their capabilities to gain access to international distribution channels (Becattini, Bellandi, & De Propis, 2014; Giuliani, Pietrobelli, & Rabellotti, 2005). Difficulties in accessing resources and improving firm-level capabilities for SMEs are accentuated in emerging and transitional economies by the underdevelopment of factor markets (Kiss, Danis, & Cavusgil, 2012; Hoskisson, Wright, Filatotchev & Peng, 2013) and weak contract enforcement (Khanna & Yafeh, 2007). An alternative mechanism for accessing international markets is to join a BG. While the entrepreneurship literature has established the role of BGs as a form of network for cultivating growth among habitual entrepreneurs and smaller firms (Iacobucci & Rosa, 2010; Lechner & Leyronas, 2009), the role of BGs in facilitating SMEs international activity has been overlooked.

BGs are distinguished from various types of networks by the nature of the relationship among firms that will typically imply an ownership relationship. Hence, Cuervo-Cazurra (2006: 420) defines BGs as a "set of legally-separate firms with stable relationships operating in multiple strategically unrelated activities and under common ownership and control." Thus, while remaining legally independent, group affiliates can engage in coordinated action, underpinned by formal ties such as equity and equity cross-holdings, debt and loan guarantees, or interlocking directorates. However, formal ties are typically supported by a shared social identity, or what Granovetter (2005)

describes as an axis of solidarity. Solidarity arising from common kinship, religious, language, or ethnic identity, fosters mutual trust among affiliates and enables members to engage in more complex and longer-term relationships with one another than is typical in arms-length market transactions. While BG scholars note that BGs may originate in informal networks as a means of facilitating transactions with one another (Strachan, 1976; Granovetter, 2005) to achieve durability that will support coordinated action, loosely linked networks will typically evolve toward more robust structure with stronger horizontal and vertical linkages (Chung, 2006; Yiu, Lu, Bruton, & Hoskisson, 2007).

Recent research finds that BG members may attain international competitive advantage through several mechanisms, including information sharing among affiliates (Lamin, 2013), developing and sharing high-quality marketing and technical skills (Siegel & Choudhury, 2012), and sponsoring affiliates into international networks (Elango & Pattnaik, 2007). Nevertheless, there are two notable gaps in the BG-internationalization literature: first, scholars have largely focused upon the international strategies of a country's largest group affiliated firms and, secondly, they have primarily considered the BGs role in facilitating foreign direct investment (FDI). BGs relationships to SMEs and their capacity for facilitating their export activity has hitherto been neglected.

With this study, I address this research gap by considering two research questions: first, I consider whether BG affiliation enhances firm export performance compared with non-affiliated SMEs? The question is relevant to both managers and policy communities due to the large numbers of SMEs in many countries and their collective economic impact. Moreover, SMEs are less likely to engage in FDI and are more likely to seek international markets through the export mode. Secondly, I seek to identify the types of resources that BGs may mediate for their SME affiliates. As the

resources needed to engage in FDI are likely to differ from those needed for successful export activity.

Our research setting is Sub-Saharan Africa. A recent editorial declares that "the greatest challenge to business in Africa stems from the persistence of institutional voids understood as the absence of market supporting institutions… and contract enforcement mechanisms" (George, et al., 2016, p. 377). The editorial goes on to identify three priority areas for management research in Africa, namely how firms i) navigate institutional voids, ii) develop their capabilities, and iii) enable opportunities. I address this research agenda by developing and testing two theory-based hypotheses. For my theory, I draw upon the transaction cost-based theory of market imperfections, which in the BG literature is known as the institutional voids perspective (Khanna Yafeh, 2007). I supplement this perspective by drawing upon insights from political economy literature on the developmental state (Chua, 1998; Evans, 1995; Schneider, 2009). I do so because political economists are particularly sensitive to the role of ethnicity, a key contingency in the African context (Fafchamps, 2004), in establishing market supporting institutions. I draw upon firm-level data collected by the World Bank's Enterprise Survey (WBES) project, which in my sample contains data collected from 33 SSA countries, comprising of some 8,885 domestically owned SMEs.

The significance of my paper is to contribute to the research agenda articulated by George and his colleagues (2016), by focusing on a prevalent and understudied organizational form in the region: BGs are widely viewed in the literature as a mechanism for closing institutional voids (Khanna & Yafeh, 2007), developing their affiliates' capabilities through resource provision (Guillen, 2000), and enabling opportunities by raising their capacities to reach international markets (Lamin, 2013). I contribute to the understanding of international entrepreneurship in a context where entrepreneurs must overcome challenges posed by 'fragile and fragmented states'

like those found across SSA countries (Fainschmidt, Judge, Aguilera, & Smith, 2016). With my focus on SMEs and exporting, I contribute to the growing BG internationalization literature. My study demonstrates support for the mediating role of resources on the relationship between SME group affiliation and export intensity, suggesting that African BGs help their affiliates internationalize their geographic reach. However, with my political economy perspective, I identify social and political constraints upon entrepreneurs located in ethnically stratified societies to suggest limits associated with the market-oriented institutional voids perspective. Secondly, BGs around the world differ in terms of their ownership structure and their horizontal and vertical linkages (Yiu, et al., 2007). I contribute to understandings of the heterogeneity of this globally prevalent organizational form by shedding light on the unique ownership and resource functions BGs perform in the African context. Third, I contribute to the Africa management literature by shedding light on the potential advantages and disadvantages of an understudied class of African organizations.

This paper is organized in the following manner. I begin with a brief overview of the literature on emerging market BGs, I describe the context and development of African BGs, and I then develop my hypotheses with specific reference to Africa. I go on to describe the data, analysis, and results, and I conclude with a discussion of the vexing managerial and policy implications posed by the functioning of Africa's BGs.

2.3.LITERATURE REVIEW

The literature on BGs' economic value is polarized between positive and negative assessments, memorably portrayed as the paragon and parasite perspectives (Khanna & Yafeh, 2007). The positive, paragon, view suggests BGs are an adaptive organizational form, able to function in weak institutional contexts, creating economic value, and contributing to a country's

social and economic development (Khanna, 2000). The negative, parasite, view, largely anchored in agency theory, sees BGs as a form of concentrated ownership, purpose built to expropriate wealth from minority investors (Morck & Yeung, 2004). In this view BGs are established by well-intentioned states to promote economic development, but they develop oligarchic tendencies and serve as rent extraction devices that protect owners' private interests at the expense of sustained economic development (Morck & Yeung, 2003). In this paper, I address BGs export enabling role through the focus of a positive perspective. In so doing, I set aside concerns raised by the agency theory perspective because this latter work is focused upon problems arising from concentrated ownership in publicly listed companies. Expropriation issues are unlikely to arise among the unlisted SME affiliates of SSA BGs.

The strategy and international business literature tend to emphasize the beneficial financial performance effects of affiliation. The earliest research focused on less developed postcolonial societies, with no indigenous entrepreneurial class. This research suggested BGs leveraged scarce entrepreneurial talent to facilitate economic growth (Leff, 1978; Strachan, 1976). BGs attracted the attention of the international community in the wake of the 'Asian miracle' beginning in the mid-20th century. A large body of literature portrayed BGs pivotal role in facilitating economic transformation in East and South Asian countries, such as China (Keister, 1998), Japan (Gerlach, 1992), Korea, (Amsden, 1989) and India (Fisman & Khanna, 2004). BGs were associated with state-led export-oriented development policies, where governments funneled capital to leading entrepreneurs who were encouraged to form BGs to diversify their product-market and international scope. Subsequent research established that the robust economic performance of these emerging markets could be attributed to BGs ability to

develop industrial capacity in an environment of imperfect factor markets (Khanna & Yafeh, 2007; Khanna & Rivkin, 2001).

The institutional voids perspective proposes that the absence of market-supporting institutions increases transaction costs for entrepreneurs, which severely limits their availability in the marketplace, leaving firms to either provide resources internally or do without them (Khanna & Palepu, 1997). Market failures arise from poorly developed property rights enforcement mechanisms, such as efficient courts for resolving contractual disputes (Khanna & Yafeh, 2007), the absence of financial institution supplying credit and equity, and the absence of educational and training institutions that assures the supply of high quality managerial and skilled employees (Khanna & Palepu, 1997). In this view, BGs represent an efficient organizing response to weak institutions, which should provide positive performance outcomes as compared with unaffiliated firms (Khanna & Rivkin, 2001). For example, Chang & Hong (2000) find that the Korean BGs allocate debt guarantees, equity investment, and facilitate internal trade, as well as arranging for firms to share R&D and advertising expertise. Considerable subsequent research confirmed BGs ability to supplant missing market institutions by acquiring and sharing resources (Colli & Colpan, 2016).

Recent research has shifted toward identifying the robustness of the group structure, with much attention given to BGs international competitiveness. This research finds multiple ways in which BGs can boost the performance of their affiliates in international markets, including providing access to their member networks (Elango & Pattnaik, 2007; Mahmood, Zhu, & Zajac, 2011), stimulating innovation (Belenzon & Berkovitz, 2010), sharing their affiliates' knowledge of opportunities in foreign markets (Lamin, 2013), and performing a venture capital function by sponsoring the growth of new firms (Masulis, Phan, & Zein, 2011).

Nevertheless, a debate continues about the relative benefits and costs of BG affiliation (Carney et al., 2011). One prominent view is that whether groups have a positive or negative effect on their affiliates' performance will depend very much on the specific institutional context (Khanna & Yafeh, 2007) and, in particular, the strength of the state and its capacity to engage with business elites in closing institutional voids and promoting economic development (Schneider, 2009). The following section considers the origins of the unique context in which Sub-Saharan African BGs function.

2.4. AFRICA'S BUSINESS GROUPS

Deeply associated with Africa's colonial history, foreign-owned BGs were a dominant feature in Africa for more than a century. Described by economic historians as investment groups (Chapman, 1985), business groups (Jones & Wale, 1988), and merchant-multinationals (Jones, 2000), colonial-era BGs were organized as free-standing firms associated with a European-based parent that operated a two-way trade between Africa and Europe (Wilkins, 1988). The African affiliate exported the product of mines, plantations, and timber operations to Europe, while importing capital goods, arranging insurance, shipping, and local logistics. For example, in East Africa, Jardine-Matheson operated tea and coffee plantations. In West Africa, the Niger Company and the United African Company were highly diversified across a range of agricultural and mining industries. In South Africa the largest colonial groups, such as Anglo-Americans, were focused on mining (Jones, 2000). During the apartheid period, domestically focused BG also formed, such as the Afrikaner tobacco and agricultural group Rembrandt (Goldstein, 2010).

With the post-WWII establishment of postcolonial governments, colonial-era BGs were no longer protected by friendly colonial governments and most sought to reduce their exposure to independent states pursuing a nationalist agenda (Carney & Gedajlovic, 2002). To reduce the risk

of expropriation BGs repatriated their capital to friendlier jurisdictions, but continued to operate, often with different organizational structures and product-market strategies (Jones, 2000). For example, during the post-independence conflict in Zimbabwe, the London & Rhodesia Mining Group expatriated its assets to Lonrho, a London-based international property and trading company, which subsequently became Africa's largest automobile importer (Jones, 2000). In the period leading up to the cessation of apartheid in South Africa, colonial-era businesses began to divest their African assets and shifted their primary listing to European stock exchanges (Jones, 2000). Thus, while these businesses continue to operate in Africa, they do so as wholly-owned subsidiaries of multinational enterprises (Goldstein, 2010).

Another distinct type of enterprise flourished in Sub-Saharan Africa during the colonial era. These were relatively small-scale trading companies that operated in parts of the African economy that were of little interest to the dominant colonial power, catering primarily to the indigenous African population, mainly in retailing, transportation, and import-export (Kennedy, 1988). These businesses were generally owned and operated by non-native ethnic minorities, whose prevalence is well documented across the region (Biggs & Shah, 2006; Fafchamps, 2000; Chua, 1998). Minority businesses in such contexts are described as ‘middlemen minorities’ (Bonacich, 1973) or ‘ethnically homogenous commercial elites’ (Davis, Trebilcock, & Heys, 2001). Chua (1998:21) notes that “India's Gujarati have been prominent or predominant in business enterprises from Fiji to virtually the entire eastern coast of the African continent.” In the West African states of Sierra Leone, Gambia, Ghana, Benin, and Liberia, ethnic-based business groups have been formed by a Lebanese diaspora (Davis, et al., 2001). In southern Sub-Saharan Africa, including South Africa, Mauritius, Mozambique, and Zimbabwe, the minority business elite is composed of European diaspora, whose elite status was established in the colonial era. Madagascar's commercial elites are comprised of both European and South Asian diaspora

entrepreneurs serving different global sectors of the country's substantial textile trade (Morris & Staritz, 2014). Unlike the dominant colonial population, most minorities elected to remain as residents following independence.

In the vacuum created by the departing colonial classes, indigenous African entrepreneurs began to emerge, also forming networks among ethnic subgroups. Fafchamps (2000) documents the specialization of indigenous African groups into different economic activities within the same country, for example, textile manufacturing is largely in the hands of Kenyan Asians while commodity food trading in the hands of indigenous Luos. Nigerian commercial elites have been identified within the Ibo minority (Davis et al., 2001). The minority Bamileka entrepreneurs of Cameroon are prominent in multiple sectors, including finance, hotels, brewing, and larger-scale retailing (Davis et al., 2001). In Rwanda and Burundi, the Tutsi minority has been an economic elite (Chua, 1998). As noted above by Granovetter (2005), interpersonal trust among BG affiliates arises from one of several 'axes of solidarity,' including kinship, religion, and ethnicity. Thus, while kinship is a common source of trust among BGs around the world, in Africa, the SSA entrepreneurial class is segmented along ethnic lines, and ethnicity is the primary axis of solidarity among BGs (Kennedy, 1988; Biggs & Shah, 2006).

There are two possible reasons why Africa's BGs have escaped attention from scholars. The first is due to data limitations. Many African groups are not documented in official statistics, because of the prevalence of relatively small firms. Jalloh (2002: 155) explains that "a major challenge in the historical reconstruction of African companies is the lack of statistical data. It is very difficult to obtain any accounts of published indicators for individual entrepreneurs or groups of companies beyond turnover and employment figures." However, the WBES data has now begun to address the issue of data availability. WBES data suggests that group affiliation is common in many African countries, including Ethiopia, where some 40% of firms report group affiliation, as

well as in Congo (38%), South Africa (37%), and Kenya (28%). While scholars have documented the emergence of some large, indigenous BGs (Hearn, Oxelheim & Randøy, 2016; Goldstein, 2010), the large-firm segment in most Sub-Saharan Africa states is either state-owned or the subsidiaries of multinational enterprises. For the most part, enterprises owned by both minority and indigenous Africans are relatively small in scale (Harrison, Lin, & Xu, 2014).

The second reason for the scarcity of African BG research is that scholars have described Africa's BGs as 'networks' (Biggs & Shah, 2006; Biggs, Raturi, & Srivastava, 2002; Boly, Coniglio, Prota, & Seric, 2014). The common identification of BGs as networks is due to the practice among established firms of entering into recurrent contracting relationships with a small number of firms. Indeed, Biggs and Shah are explicit on this point, identifying African networks in the following manner: "I define a network to include a broader set of economic functions where members of the business group or 'club' share information and informally enforce contracts" (2006, 3047). When referring to insider agents from ethnically homogenous communities, Fafchamps (2004:303) uses the terms networks and business groups interchangeably, noting that, for example, even among Asian Africans there are distinct communities that form homogenous groups, like 'the Shahs, the Patels, the Sikhs, and the Ismaelians…(who) distrust each other as much as they distrust non-Asian Africans". Similarly, Kennedy (1988:187), describes Africa's trading and merchant groups as a "distinctive type of African business venture based on a series of semi-independent branch firms yet linked to a parent enterprise." This type of BG, i.e. an associational club of existing firms, is routinely found in other economies, including Taiwan where they were known as *guanxi qiye* (Numazaki, 1993) during the early phases of export-led development, and in the export-intensive sectors of Southeast Asian states (Hamilton, 2000; McVey, 1992). However, in Taiwan and Southeast Asia this type of BG gradually evolved to become more hierarchical and centrally or family-controlled

BGs, (Chung, 2006). In Taiwan, these family-controlled groups are the dominant form, known as *jituan qiye* (Numazaki, 1993). However, large hierarchical family-controlled BGs appear uncommon in SSA (Kennedy, 1988).

Entrepreneurship scholars have identified intensive kinship obligations among Sub-Saharan Africa families (Smith, 2009), which tend to encourage families to establish informal firms (Khavul, Bruton, & Wood, 2009). While family-owned informal firms enjoy a broad legitimacy (Webb, Tihanyi, & Ireland, 2009), informal firms are not conducive to the emergence of a growth-oriented corporate structure capable of sustaining international capabilities (Kennedy, 1988). Scholars agree that kinship networks can provide resources to entrepreneurs, but the cost of raising resources through these means outweigh the benefits, with negative effects on overall performance (Khayesi, George, & Antonakis, 2014). Kennedy (1988) explains that rather than supporting firm growth, intensive kinship links among indigenous Africans limit capital accumulation, since entrepreneurs have difficulty in resisting family members' claims. Modestly successful entrepreneurs are subject to constant demands from family and are "expected to finance the education of nephews and nieces and younger siblings or even provide more or less permanent support for widowed or deserted sisters …and … employment irrespective of their qualifications" (1988, p. 169). Kennedy suggests that African entrepreneurs' inability to limit the claims of kinship results in a drain on resources and drives owners to conceal or immobilize their financial resources by investing in relatively "unproductive assets such as agricultural land and real estate" (1988, 172).

Finally, the institutional systems of SSA countries can be characterized, with a few exceptions, as 'fragmented and fragile states' (Fainschmidt, et al., 2016). In this type of institutional system, there is a scarcity of human, financial, and social capital (Whitley, 1999).

Moreover, 'fragmented and fragile states' typically lack the coherence and capacity that political economists believe is necessary to implement economic development strategies that would produce these resources (Evans, 1995). Across Sub-Saharan African fractionalized ethnic groups compete intensively for political power (Harrison, et al., 2014), often with a predatory intent of redirecting economic rents to private interests (Evans, 1995; Rowley, 2000). Unlike East and Southeast Asia, the political leaders of SSA states have been unable to develop productive relationships with business elites to gain their cooperation in the execution of an economic development strategy. By comparison, in ethnically homogenous East Asian states (China, Japan, Korea, and Taiwan), public officials and entrepreneurial elites were able to forge a consensus to implement a development strategy (Chua, 1988). In Southeast Asian states (e.g. Indonesia, Malaysia, Thailand), governments representing ethnic majorities were able to work sufficiently well with ethnic minority business elites (mainly Diaspora Chinese), to initiate economic development, though not without tensions (McVey, 1992).

Thus, across Sub-Saharan Africa, I encounter a distinct institutional context of postcolonial societies with weak or fragile states, a fractionalized political community, and an ethnically divided business class. This is distinct from other institutional settings where BGs have flourished and contributed to the competitiveness of their economies through exporting (McVey, 1992) and, later, through FDI (Guillen, 2010). The broader question addressed under the light of recently available data is whether contemporary African BGs have begun to develop export-oriented capabilities consistent with economic development. Next, with my hypotheses I consider whether BGs member firms have better export performance and resource positions as compared with independent firms.

2.5. HYPOTHESES

Consistent with the logic of weak institutions and market failure, I develop two hypotheses pertaining to BGs export performance. For my first hypothesis, I reason that group affiliates will generally exhibit superior export intensity as compared with independent firms. There is much support for the view that BG affiliation provides a strong resource advantage which facilitates their expansion in international markets. Previous research suggests there are at least three ways in which BGs help their affiliates improve their international performance. First, groups may share intangible and financial resources with their affiliates (Chang & Hong, 2000). Examples of shared intangible assets include international marketing skills (Siegel & Choudhary, 2012) and providing access to the market knowledge and connections of sister affiliates (Lamin, 2013). In this regard, a group may sponsor the entry of an affiliate firm into an international network (Elango & Pattnaik, 2007). Secondly, experienced BG executives can advise member firms on how to develop their international projects (Amsden & Hikino, 1994). Thirdly, BGs can improve their affiliate's international competitiveness by importing and disseminating technologies and practices from more advanced economies among group affiliates (Chari & Dixit, 2015).

However, this positive view is by no means uncontested. Castellacci (2015b) identifies several factors that may produce a less pronounced international effort in BGs when compared with unaffiliated firms. At the heart of the counterargument is the suggestion that group affiliation will promote a parochial outlook on international activities because the intensity of trust relations diminish with geographic distance. Despite these reservations, I expect that SSA-BGs will typically possess an outward-looking orientation. First, because of the minority ethnic composition of many African BGs and their historical connections to the import-export trade, there are likely to be lasting links to their country of origin. Ethnic minorities' linkages between home and adopted countries are

known to be long-lasting and to facilitate trade (Rauch & Trindade, 2002). Secondly, many indigenous African entrepreneurs have experience in international trade arising from education and working overseas among immigrant diaspora (Kennedy, 1988; Styan, 2007). Thirdly, recent research suggests a new generation of African entrepreneurs have established transnational networks within Africa, improving intra-Africa trade through cross-national commercial ventures (McDade & Spring, 2005). I expect that these entrepreneurs are likely to become the focal point for export-oriented businesses who can benefit through BG affiliation. Hence, while there are arguments that group affiliation can either boost or retard export intensity, I believe that the beneficial effects will outweigh the potential retardant effects of a parochial group structure and I reason that group affiliation will, on balance, favor greater export intensity:

H1: SME affiliation with a BG will have a positive effect on a firm's export intensity

The institutional void thesis predicts that BGs provide resources to affiliates when factor markets are imperfect or inefficient such that affiliates can strengthen their capabilities and outperform unaffiliated firms (Guillen, 2000; 2010). However, countries will differ in the degree to which specific institutions are weak: for example, some countries such as Zimbabwe have had well-developed banking and credit institutions, but weak institutions for the supplying of well-trained employees (Fafchamps, 1997). Hence, if markets are relatively efficient for some types of resources then BGs will have no comparative advantage in providing them to its affiliates. Moreover, firm strategic choices will also determine the types of resource an SME will need from the group (Carney et al., 2011); firms intending to engage in FDI may need different resources than firms seeking to export.

With the following hypotheses, I examine the specific kinds of resources that Sub-Saharan Africa BG's are likely to mediate for their affiliates. I consider four factor-markets that are said to have chronic imperfections in the SSA region, namely, formal (external) credit, informal credit, human and ICT resources. Hence, I propose that resources can act as an intermediate variable between affiliation and export intensity. Whereas scholars have examined the affiliation-international performance relationship (Becker-Ritterspach, & Bruche, 2012; Tan, & Meyer, 2010), none have examined the mediating role that resources of SMEs play in the focal relationship. Consequently, the literature is largely silent on the important questions of whether BG affiliation offers distinctive resources to SMEs, and if so, whether these resources explain international performance differences between affiliated and non-affiliated firms. I reason that small affiliates' resources are likely to differ from those of freestanding firms in at least three dimensions: access to credit, skilled employees, and technology sophistication.

Access to Formal Credit. It is well established that credit availability is a key requirement for successful export performance (Cavusgil, 1984) and that SMEs around the world typically confront difficulties in accessing credit (Beck & Demirguc-Kunt, 2006). The problem of external credit is accentuated in developing economies, such as SSA, where contract enforcement can be prohibitively costly (Hearn & Piesse, 2013). In such markets, creditors receive very little protection and transaction costs will be a significant barrier to the availability of external credit. The most salient market imperfection identified by the BG literature is a firms' inability to access credit (Khanna& Yafeh, 2007). Surveys of executive opinion, conducted by the World Economic Forum published in its annual Global Competitiveness Report, find that access to financing is a significant problem for executives in the least developed economies. The 2015 Global Competitiveness Report finds that executives in 18 of the 41 Sub-Saharan African countries

considered ‘access to financing’ to be the most problematic factor for doing business (Schwab, 2015). With this hypothesis, I distinguish between formal and informal credit because the theoretical mechanism to explain how BGs address the problem will differ.

Formal credit is money borrowed from public and private sector banks and other financial institutions, such as credit unions or cooperatives. BG affiliation can offer member firms a reputational advantage (Khanna & Palepu, 1997) where Africa’s conservative financial institutions may be more willing to advance credit to a group affiliated SME if they believe it is a member of a reputable group that is less likely to default. Additionally, the group as a whole has a strong incentive to ensure that their sister affiliates respect their credit obligations since the credit-worthiness of all affiliates can suffer if individual members fail to honor their commitments (Khanna & Palepu, 1997). For these reasons, I expect BG affiliated SMEs will have better access to formal credit compared with freestanding firms and that superior credit availability will enhance export performance.

H2a: For SMEs, the relationship between BG affiliation and affiliate export intensity is positively mediated by better access to formal credit.

Access to Informal Credit. Studies of Asia’s BGs find that many large family-controlled business groups have evolved from informal credit sharing practices (Numazaki, 1993). Scholars studying informal credit among Asian SMEs observed that recurrent contracting encouraged the development of more stable risk-sharing networks (Fafchamps & Lund, 2003; Biggs, 1991). Studies of trade credit and informal lending in ethnic communities are also important determinants of stable forms of relational contracting in Zimbabwe and Kenya (Fafchamps & Lund, 2003). This finding suggests that more stable and complex organizational forms may emerge from sharing informal credit. Hence, I consider the extent to which SSA BGs are likely to perform this function.

Informal credit refers to deferred payments or advances from trading partners (i.e., trade credit), such as suppliers and customers, or loans from friends and relatives. Informal credit occurs when trading partners develop relational contracts based upon learning and prior experience and also includes *quasi-credit,* which Fafchamps (1999:257) defines as "debt obligations that are renegotiated to reflect shocks affecting lender and borrower as well as intra-family gifts and loans." Gifts are considered credit in this sense because the gift-relationship implies reciprocity in unspecified circumstances.

BG affiliation can overcome barriers to lending arising from asymmetric information between borrowers and lenders. This is because group member lenders typically have better information than non-members about borrowers' opportunities and can make better appraisals of credit risk (Biggs, Ratury, Srivastava, 2002). Group affiliation should facilitate informal credit arrangements as members may confidently extend trade credit to other group affiliates with the expectation of reciprocity. Affiliates who default on their credit payments are likely to be excluded from future group-related transactions, thus affiliates have strong incentives to honor their debts (Fafchamps, 2004). Moreover, trade credit is likely to improve the firms' export intensity since export transactions cannot be easily settled via instantaneous payment for the exchange of goods (Kumar & Matsusaka, 2009). Fisman (2001) finds that African firms with poor credit access have a higher probability of inventory shortages that lead to lower rates of productivity and firm capacity utilization. Thus, I expect that group affiliation will ameliorate credit constraints and boost foreign revenues.

H2b: For SMEs, the relationship between BG affiliation and affiliate export intensity is mediated through better access to informal credit.

Skilled Employees. There is a significant body of literature attesting to the relationship between the quality and skills of the firm's employees and export intensity. One reason is that firms may escape intense competition in international markets by using skilled workers to differentiate their products (Munch & Skaksen, 2008). However, the availability of well-trained and appropriately skilled employees is a major obstacle to doing business in emerging markets. In African countries, firms face difficulties in finding adequately qualified employees because educational and vocational training institutions are poorly developed (Kiggundu, 2002). Providing affiliates with qualified individuals is frequently advanced as a source of superior BG member performance (Chang & Hong, 2000; Siegel & Choudhury, 2012). Khanna and Palepu (2000) suggest that BGs can mitigate the imperfections in the market for skilled human resources arising from the absence of adequate training and educational institutions. Specifically they suggest that groups are likely to develop a cadre of skilled and trained personnel that can be deployed amongst group members when the need arises. For example, BGs can create project management teams to address key problems (Amsden & Hikino, 1994) or offer intra-group training programs (Chang & Hong, 2001).

Additionally, SSA is often characterized as being comprised of low trust societies (Fukuyama, 1995), and firms may be unwilling to invest in training. Firms may be unwilling to bear the costs of training since trainees may defect to other firms once they have received training. However, ethnic-based groups may enjoy an advantage in identifying talented and trusted employees from within their networks (Chua, 1998), and employees of group related firms may have a reduced incentive to defect. Further, talented individuals from minority ethnic groups frequently encounter discrimination when seeking careers in their professions and in the public sector; consequently such individuals are confined to finding occupations among minority firms

(Chua, 1998). As a result, compared with freestanding firms, better quality skilled and trusted employees are likely to be available to group affiliated firms.

H2c: For SMEs, the relationship between BG affiliation and affiliate export intensity is positively mediated by better access to skilled employees.

Information and Communications Technology. Another strand of the BG literature identifies their capacity for acquiring and disseminating productivity-enhancing technologies among affiliates (Mahmood et al., 2011). A significant challenge for emerging market economies is the goal of 'catching up' with the technological capabilities of firms based in mature economies. In this respect, many domestic firms begin with 'intermediary technology' that enables progress toward participation in international activities (Ernst, Ganiatsos, & Mytelka, 2003). In particular, better inventory controls and rapid-response modifications, based on web-based feedback from customers Information and Communication Technology (ICT) resources, are key export enablers for SMEs in emerging markets (Todd & Javalgi, 2007). Hence, I expect BGs will have greater capacity to provide their affiliates with access to routine and mid-range technologies, such as ICTs. I emphasize the importance of ICT in Africa due to Africa's distance from major markets and poor transportation infrastructure, which means that the communication by Internet and websites is likely to be important for export-oriented firms.

H2d: For SMEs, the relationship between BG affiliation and affiliate export intensity is positively mediated by better access to superior ICT technology.

We propose the conceptual model presented in Figure 2-1, which posits that human resources quality, technology, and formal and informal credit serve as intermediate variables between group affiliation and firm export intensity.

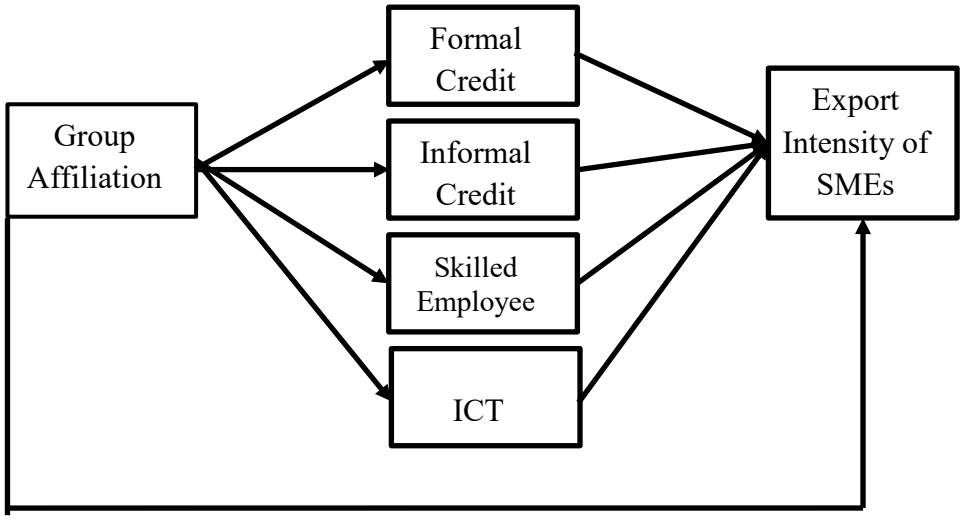

Figure 2-1.Conceptual Model

2.6. DATA AND VARIABLES

2.6.1. Sample

Our data is taken from the World Bank's Enterprise Surveys (WBES, 2015), which includes a wide array of data from 125,000 firms, located in 139 countries. Enterprise survey data is collected by the World Bank to gauge the investment climate in the world's less developed and emerging economies and to improve understanding of firm behavior and performance. I selected the most recent data for 33 countries (Standardized data 2006-2014) containing 8,885 SMEs. WBES is a global stratified random sample that includes a wide variety of firms based upon their size, business sector, geographic region, and country, so the firms in my sample are likely to be representative of SMEs from the selected country. The World Bank conducts personal interviews with firm representatives with their own local staff. Using a local researcher means that he or she will typically be familiar with the local language and culture. Moreover, the World Bank translates and back-translates the survey instrument. The WBES data are used widely in economics and development economic studies (e.g. Harrison, Lin, & Xu, 2014) and studies of BG functioning (Castellacci, 2015a, 2015b). The WBES data provides information on firm ownership and group

affiliation as well as several indicators of export activity, technological sophistication, the adoption of new ICTs, and access to internal and external financing, as well as sufficient information on my control variables. For survey questions and data sources please see Appendix A. These data allow us to determine whether group affiliated firms have better access to resources.

2.6.2. Measurements and Variables

Dependent Variable. Comparable to other studies of export performance, I use export intensity as the dependent variable (e.g., Sahaym, Treviño, & Steensma, 2012). My export intensity variable is based upon WBES question 'Qd3c' asking, 'what percent of the establishment sales were direct exports?'

Independent Variable. The key independent variable in the study is BG affiliation (BGA); it is a dummy signifying that the enterprise is a member of the group. BG membership is difficult to determine to make the definition of group affiliation unsettled (Khanna & Rivkin, 2006). Affiliation is most commonly operationalized as a firm that is publicly listed on a national stock exchange and is partially owned at common threshold by another firm (Carney et al., 2011). Sampling from publicly listed firms means BG research tends to focus on larger enterprises, thus excluding SMEs, and making cross-national comparisons difficult when studies apply different ownership thresholds. WBES survey data is valuable in this regard since it uses a standard definition of group affiliation across jurisdictions. WBES data also meet the group criteria found in the literature, specifically that groups are 1) formed by legally independent companies, (2) affiliated with a larger organization in a stable manner, and (3) subject to coordination and support by the larger enterprise (Castellacci, 2015a). The World Bank survey establishes that firms are independent according to the following criteria: enterprises must be i) legally registered for tax purposes, ii) must make its own financial decisions and have its own financial statements, separate from those of the group, iii) must have its

own management and control over its payroll, and iv) is owned by private domestic individuals, companies, or organizations. Affiliated SMEs are self-identified as not a 'firm on its own' but linked with a larger enterprise (Q7). This definition corresponds to Kennedy's (1988) description of Africa's business groups. Hence, affiliation is self-indicated by the SME to be legally independent but affiliated with a larger organization in a stable manner. By this definition 14% of privately-owned Sub-Saharan African SMEs report a group affiliation.

Mediating Variables

Formal and Informal Credit: The WBES provides the percent of working capital financed externally through different sources, including banks, non-bank financial institutions, credit from suppliers and advantages from costumers. The database enables us to distinguish between formal and informal sources of credit. To measure formal credit, I aggregated percent financing from private and state-owned banks (see question QK3bc in WBES) and non-bank financial institutions, such as microfinance institutions, credit cooperatives, credit unions, or finance companies (QK3e). To gauge informal credit, I accumulated the percentage of credit-based purchases from suppliers and advances from customers (QK3f) and other external, informal sources, such as moneylenders, friends, relatives, etc. (QK3hd). A descriptive analysis on financing of working capital shows that averages of financing through formal credit and informal credits are 8.8 % and 18.84 %, respectively. These relatively low mean values testify to credit scarcity in the region, suggesting that SMEs are largely financed through internal sources.

Skilled Employees. The WBES (2015) defines a permanent employee as "all paid employees that are contracted for a term of one or more fiscal years and/or have a guaranteed renewal of their employment contract and that work a full shift" (p. 161). Approximately 10% employees (14 % production employees and 4 % non-production employees) received formal

training in a given fiscal year. To measure skilled employees, I consider the education level of full-time employees that was based on number. There were two questions that asked "number of full-time non-production employees received formal training" and "number of full-time production employees received formal training." I combine these two items to form the factor of skilled employees through a component factor analysis (CFA). The result of CFA revealed an adequate percentage of explanations of variance for the skilled employees' factor. More specifically, the eigenvalue of skilled employees factor was 1.45 (>1), which explains 72.5% of the variance.

*Technology Sophistication***.** Given the important facilitating role of information and communication technology for exporters (Todd & Javalgi, 2007), I use a measure of a firm's usage of ICT based technologies. The WBES asks 6 questions in relation to the technology usage situation of companies, such that they are dummy variables (yes=1 & No=0). With regard to these questions, I establish and index for each firm by counting how many questions (out of 8 questions) were answered. I summed the "Yes" answers, meaning a given technology is used, and created an index in the following manner: firm's technology sophistication index= (sum of "Yes" answers / total number of answers (yes & no answers)) * 100. The average utilization of technology for African SMEs is 34 %.

Control Variables. I use four firm-level control variables that prior studies found to be related to export performance. I use firm age (years since founding) and firm size (a composite measure of permanent workers/full-time employees of this firm at the end of last fiscal year) as firm demographic characteristics that have been found to predict export intensity (Bonaccorsi, 1992). Larger firms typically enjoy better access to resources that enable export intensity (Wagner, 2001). There is much evidence for a positive relationship between a firm's age and export; older firms consider exporting as an increasingly viable strategic choice to expand their distribution network

(Ganotakis & Love, 2012). The products of some industries are more tradable than others, therefore, I control industry effects with the WBES industry categories[1]. I control for foreign ownership since Cerrato and Piva (2012) noted that export intensity is typically higher in firms with higher foreign ownership.

To control for the effects of the institutional environment and country-specific trade policies, I use country as a nominal variable (33 countries). In addition I control for five country-level effects. To control for the restrictive trade regulations, I use the World Bank Doing Business index for "trading across borders." I control for Sea Access as I expect firms exporting from landlocked countries to confront greater foreign trade difficulties. To control for credit availability, I use the ease of getting credit measures from the World Bank's Doing Business report. To control for the level of technological sophistication in a country, I use the availability of latest technologies measure from the GCR. To control for availability of trained employees, I use the quality of education system measure from the GCR. The means and correlations are presented in Table 2-1. Appendix 1 provides details of the data sources.

[1] Textiles, Leather, Garments, Food, Metals and machinery, Electronics, Chemicals and pharmaceuticals, Wood and furniture, Non-metallic and plastic materials, Auto and auto components, Other manufacturing, Retail and wholesale trade, Hotels and restaurants, Other services, Other: Construction, Transportation, etc.

Table 2-1.Means and correlation

	Variables	Mean	N	1	2	3	4	5	6	7
1	BGA	.127	8885	1.00						
2	Export	3.66	8885	.025*	1.00					
3	Skilled Employee	-.055	8885	.078**	.139**	1.00				
4	ICT	27.61	8885	.228**	.192**	.216**	1.00			
5	Formal Credit	8.79	8885	.043**	.082**	.083**	.159**	1.00		
6	Informal Credit	18.84	8885	-.036**	.013	.037**	-.077**	-.102**	1	
7	Business Sector	7.41	8885	.060**	-.050**	-.087**	.204**	.021*	-.032**	1
8	Size	1.18	8885	.166**	.186**	.405**	.380**	.129**	.010	-.027**
9	Foreign Own.	8.8	8885	-.087**	.105**	.055**	.138**	.021*	-.011	.038**
10	Age	16.29	8885	.098**	.087**	.154**	.238**	.085**	.008	-.008
11	Country	25.62	8885	.00	-.033**	.006	-.045**	-.081**	.113**	-.131**
12	Sea Access	.71	8885	-.090**	.038**	.051**	-.097**	-.030**	.145**	-.025*
13	Trade Across	41.88	8885	-.055**	.112**	.019	.075**	.115**	-.007	.091**
14	Get Credit	42.77	8885	.035**	.001	.154**	.128**	.054**	.167**	-.081**
15	Education System	3.38	8885	.01	.060**	.076**	.156**	.120**	-.008	-.017
16	Technology Ava.	3.97	8885	.00	.076**	.047**	.149**	.110**	-.087**	.009

	Variables	8	9	10	11	12	13	14	15	16
1	BGA									
2	Export									
3	Skilled Employee									
4	ICT									
5	Formal Credit									
6	Informal Credit									
7	Business Sector									
8	Size	1								
9	Foreign Own.	.111**	1							
10	Age	.263**	.017	1						
11	Country	-.001	-.124**	.055**	1					
12	Sea Access	-.014	-.041**	-.016	-.034**	1				
13	Trade Across	.027*	.089**	.070**	-.152**	.489**	1			
14	Getting Credit	.119**	-.066**	.158**	.385**	.152**	.036**	1		
15	Education System	.095**	-.038**	.226**	.134**	-.074**	.007	.501**	1	
16	Technology Ava.	.053**	-.018	.104**	-.080**	.247**	.579**	.195**	.343**	1

**.Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

2.7. METHODOLOGY AND RESULTS

2.7.1. Methodology

To examine how financial, human, and technology indicators might act as mediators in the relationship between group affiliation and export intensity, I follow Baron and Kenny's (1986) triple test for mediation. First, I require that the mediators (formal and informal credit, skilled employees, technology sophistication) must be explained by the independent variable (BGA). Second, the effect of the independent variable (BGA) on export intensity should be significant when the mediators are absent. Third, the introduction of the mediator in the export intensity equation should be significant, and, at the same time, the effect of the independent variable (BGA) should either decrease in magnitude or disappear. As an extreme case, full mediation should mean that the direct effect of BGA on export intensity should not be significant. The standard test for mediation is to estimate three equations through ordinary least squares (OLS) independently. Following Baron and Kenny (1986), I estimate the following three equations:

(1)

$$\text{ICT} = \alpha_1 + \beta_1 \text{BGA} + \beta_2 \text{Size} + \beta_3 \text{Foreign Ownership} + \beta_4 \text{Age} + \beta_5 \text{Sector} + + \beta_6 \text{Country-Code} + \beta_7 \text{Technology Availability} + \varepsilon_1$$

$$\text{Informal Credit} = \alpha_2 + \beta_8 \text{BGA} + \beta_{21} \text{Size} + \beta_9 \text{Foreign Ownership} + \beta_{10} \text{Age} + \beta_{11} \text{Sector} + \beta_{12} \text{Country-Code} + \beta_{13} \text{Getting Credit} + \varepsilon_2$$

$$\text{Formal Credit} = \alpha_3 + \beta_{14} \text{BGA} + \beta_{15} \text{Size} + \beta_{16} \text{Foreign Ownership} + \beta_{17} \text{Age} + \beta_{52} \text{Sector} + \beta_{18} \text{Country-Code} + \beta_{19} \text{Getting Credit} + \varepsilon_3$$

$$\text{Skilled Employees} = \alpha_4 + \beta_{20} \text{BGA} + \beta_{21} \text{Size} + \beta_{22} \text{Foreign Ownership} + \beta_{23} \text{Age} + \beta_{24} \text{Sector} + \beta_{25} \text{Country-Code} + \beta_{26} \text{Education System} + \varepsilon_4$$

(2)

$$\text{Export Intensity} = \alpha_5 + \beta_{27} \text{BGA} + \beta_{28} \text{Size} + \beta_{29} \text{Foreign Ownership} + \beta_{30} \text{Age} + \beta_{31} \text{Sector} + \beta_{32} \text{Country-Code} + \beta_{33} \text{Sea Access} + \beta_{34} \text{Trade Across} + \varepsilon_5$$

(3)

Export Intensity= α_6 + β_{35} BGA + β_{36} Size + β_{37} Foreign Ownership + β_{38} Age+ β_{39} Sector+ β_{40} Country-Code+ β_{41} ICT + β_{42} Skilled Employee. + β_{43}Formal Credit+ β_{44} Formal Credit+ β_{45} Sea Access + β_{46} Trade Across+ β_{47}Technology Availability + β_{48} Getting Credit + β_{49} Education System + ε_6

where α is the constant, β is the coefficient vector, and ε is the error term. Although the results of these three expressions reveal the existence of indirect effect (full or partial mediations), I need to know the effect size of my mediators (indirect effect size of my mediators). In other words, to assess the proposed indirect effects of my mediators on export intensity, I conducted a multiple mediation model with 5000 bootstrapping samples and the PROCESS syntax for SPSS by Hayes (2013). I use version 2.12 of process analysis, which can be freely added to SPSS software. This feature makes the simultaneous calculation of all links possible, partly solving the non-normality of interaction terms with the use of bootstrapping through repeated sampling with replacement. The model developed mirrors Hayes's (2013) Model 4, with the independent variable being the dummy for group affiliation , the dependent variable being export intensity, the mediator being the 'ICT', 'financing (formal and informal credit)' and 'skilled employees (i.e. trained employees)', and the control variables as stated above. This model (4) provides multiple mediation models in order to allow us to examine the hypothesized mediators simultaneously. I use Hayes' multiple mediation model to estimate equation(s) 3, which is the primary advantage of the Hayes model. Therefore, to estimate equation 2, as a test for hypothesis 1, I conduct OLS independently to analyze the direct impact of the BG affiliation on export intensity of SMEs. Finally, I conducted OLS independently to test equation 1 to analyze the effect of the BG affiliation on SMEs' resources. Moreover, I use Sobel (1982) tests and bootstrapping confidence intervals as robustness tests that show the existences of mediating effect and the indirect effect size of BGA (independent variable) on export intensity (dependent variable) through each of my resources (mediators).

2.8. RESULTS

To test my hypotheses, I estimate the three equations presented above. I first confirmed that the BGA variable explained technology sophistication, skilled employees, formal credit, and informal credit (Equation [1], see Table 2-2). I found that, in order of importance, the coefficients associated with the technology sophistication (ß = 14.036; $p<0.001$), the skilled employees (ß = 0.01; $p<0.05$), and formal credit (ß = 1.137; $p<0.05$), were positively associated with BGA, but to my surprise informal credit (ß = -2.89; $p<0.001$) was negatively associated with BGA. This latter result suggests group affiliates are less reliant on informal credit than the general population of independent firms, perhaps, formal credit is a substitute for informal credit in this context.

The results in Table 2-3 correspond to my export intensity equations (2 & 3). To test hypothesis 1, I estimated the second equation of the Baron and Kenny (1986) procedure: a model in which the BGA variable was related to export intensity (Equation [2]). Focusing on the OLS estimations of the export intensity equation, I can see that BGA is significant in Model A.1, having a positive effect on the export intensity and leading to the conclusion that BGA is meaningful in international performance of SMEs in Africa (See Table 2-3). As expected, the control variables of firm size, foreign ownership, firm age, and ease of trading across borders, show a positive and significant impact on export intensity, whereas the influence of the business sector is significant and negative.

To determine whether formal and informal credit, skilled employees, and technology sophistication have a mediating influence on export intensity, I tested a full model, taking into account the effect of BGA, the mediators, and the control variables on the export intensity (Equation [3]). As mentioned above, for hypotheses 2a, 2b, 2c, and 2d to be supported, I need the mediators and BGA to explain export intensity. The full model should also show that the

magnitude of the coefficients associated with the export intensity either decrease or disappear when the mediators are introduced into the estimations. Model A.2 of Table 2-3 introduces the mediators into the estimations and tests hypotheses 2a through 2d. The coefficient on the mediating variables are positive and highly significant, meaning that these variables have an effect on export intensity, which supports the idea that these variables are positively related to export intensity. Furthermore, a comparison of the coefficients of the BGA shows that it is negative and non-significant (ß = -.48; $p>0.1$) versus the one in Model A.1 (that is positive and significant; ß = .59; $p<0.05$). Therefore, the effect of BGA has been fully mediated by formal credit, skilled employees, and technology sophistication, meaning that H2a, H2c, and H2d were supported. Note that H2b is not supported because while informal credit is positively related to export intensity, BGs affiliation to informal credit is significant and negative (Table 2-2). Hence, if my group firms' export intensity is boosted by access to informal credit, they do not appear to get it through their group affiliation[2]. Finally, the firm size, firm age, foreign ownership, sea access, trading across borders and education system variables show positive and significant impacts on export intensity, whereas the business sector, ease of getting credit, and technology availability are negative and significant.

[2] The negative finding may reflect a suppression effect in my model in which informal credit negatively mediates the link between BGA and export intensity, while other resources serves as a positive mediator. Therefore, despite the suppression effect of informal credit, I still see the positive mediating effect through other resources (Smith, Ager, & Williams, 1992).

Table 2-2. Regression- Equations 1

Variables	Formal Credit		Informal Credit		Skilled Employee		ICT	
	Coeff.	se	Coeff.	se	Coeff.	se	Coeff.	se
BGA	1.137*	.656	-2.89***	.786	.01*	.006	14.036***	.8
Business Sec	.076	.054	-.066	.065	-.004***	.000	1.41***	.066
Size	5.59***	.590	.096	.704	.184***	.005	22.54***	.713
Foreign Own.	.001	.008	.002	.010	.00	.000	.117***	.01
Country	-.194***	.020	.114***	.024	.00	.000	-.005	.023
Age	.074***	.016	- .027	.020	.001***	.000	.268***	.02
Getting Credit	.074***	.011	0.172***	0.013				
Education System					.009***	.003		
Technology Ava.							5.2***	.010
Constant	2.107	.984	9.801***	1.18	-.279***	.012	-37.15***	1.992
R	.180		.181		.415		.508	
R^2	.032		.033		.172		.26	
F	42.50		42.93		263.81		441.8	
df	8878		8878		8878		8878	

*p<0.10. ** p<0.05. ***p<0.001

The results of the formal tests of the indirect effects are shown in Table 2-4. I use both Sobel tests (Baron & Kenny, 1986; Sobel, 1982) and bootstrap confidence intervals (CIs) by conducting a multiple mediation model (Hayes, 2013). The Sobel test assumes that the indirect effect of the independent variable is normally distributed, but this assumption makes the test too conservative (MacKinnon, Warsi, & Dwyer, 1995). The indirect effect is considered to be significant when the Sobel test Z value is significant (>1.96). The bootstrapping approach (Bollen & Stine, 1990; Shrout & Bolger, 2002) is a nonparametric method that makes different assumptions about normal distribution and symmetries. When the resultant bootstrapped confidence intervals (CIs) do not contain value 0, the indirect effect is different from 0. Since the Sobel and bootstrap tests make different assumptions, it is advisable to use both. The results of the bootstrap provide significant evidence of the existence of indirect effects with a bootstrapped 90 percent of CIs not containing zero for all my mediators (percentile CI_{skill_empl} =0.0050, 0.1305, $CI_{Info.\ credit}$ =-0.0934, -0.0163; $CI_{For.\ credit}$ =0.0032, 0.0821; $CI_{ICT.}$ = 1.2048,0.1409). The Sobel test ($Z_{ICT.}$ =9.86; p <0.001, $Z_{For.\ credit}$ =1.57; p >0.1, $Z_{Info.\ Credit}$ =-2.00; p <0.05, $Z_{skill\_empl.}$ =1.75; p <0.1; as the Sobel Z is significant: Z >1.96 or Z<-1.96) results confirm the bootstrap test, except the mediating effect of formal credit. Furthermore, the results of bootstrap confirm the indirect effect of BGA on export intensity through increased technology sophistication (size effect= 1.004), formal credit (size effect=0.029), and skilled employees (0.0503). Conversely, and contrary to my expectations, the model finds that the indirect effect of BGA on export intensity is significant and negative through informal credit (effect size= -.0419) (See Table 2-4).

Table 2-3. The Effect of BGA on Export Intensity

Variables	Export Intensity			
	Model A.1		Model A.2	
	Coeff.	se	Coeff.	se
BGA	.59**	.305	-.488	.468
Business Sec	-.250***	.024	-.324***	.039
Size	5.542***	.300	3.588***	.458
Foreign Own.	.044***	.004	.034***	.006
Age	.031***	.008	.007	.012
Country	-.007	.008	.009	.014
Sea Access	.090	.241	.784**	.398
Trade Across	.066***	.007	.089***	.013
Getting Credit			-.064***	.009
Education System			1.696***	.298
Technology Ava.			-.531*	.308
Formal Credit			.024***	.008
Informal Credit			.020***	.006
Skilled Employee			4.863***	.894
ICT			.077***	.006
Constant	-4.701***	.574	-6.328***	1.305
R	.239		.290	
R2	.06		.083	
F	74.16		53.76	
df2	8876		8869	

*p<0.10. ** p<0.05. ***p<0.001

Table 2-4. Bootstrapping and Sobel's test: The Test of Indirect Effect

	Bootstrapping				Sobel's Test	
	Effect	Boot SE	BootLLCI	BootULCI	z	P
Formal Credit	.0290	.0222	.0032	.0821	1.570	.110
Informal Credit	-.0419	.0216	-.0934	-.0163	-2.000	.045
Skilled Employee	.0503	.0365	.0050	.1305	1.751	.070
ICT	1.004	.1140	1.2048	.1409	9.866	.000

2.9. ENDOGENEITY

Our key explanatory variable, group affiliation (BGA), is potentially subject to reverse causality. Whereas I have assumed that affiliation with the group provides the firm with export performance-enhancing resources, it is possible that resource-rich firms are more likely to be invited to join a BG. For this possibility, the exogeneity of BGA as an explanatory variable is suspect. If so, the variable BGA in Eqe.3 would be correlated with the error term, and I will see an overestimated effect of group affiliation on export performance of affiliates. To evaluate endogeneity bias, I use an Endogenous Treatment Effects model (Vella & Verbeek, 1999)[3]. The endogenous treatment model is composed of an equation for the outcome y (Equ. 3) and an equation for the endogenous treatment t (Equ. 4)[4], which I estimate simultaneously.

(4)

$$BGA = \alpha_7 + \beta_{50}Size + \beta_{51}Age + \beta_{52}\,Sector + \beta_{53}\,Country\text{-}Code + B_{54}\,ICT + \beta_{55}\,Skilled\ Employee. + \beta_{56}\,Formal\ Credit + \beta_{57}\,Informal\ Credit + \beta_{58}Diversity + \mathcal{E}_7$$

While Equ.3 estimates the determinants of export performance, Equ.4 determines the factors that influence the selection of a firm into a business group. The dependent variable in Equ.4 (BGA) is included among the explanatory variables in Eqn.3, where export performance is a dependent variable. As I noted, some firm-specific characteristics and resources explain BGA (see Equ. 4). My finding shows that the model fits overall (Wald chi2 (15) = 800, p<.001), and the likelihood-ratio test shows that I can reject the correlation between the treatment errors and the outcome

[3] Treatment-regression model or endogenous dummy-variable model. "Estimation is by either full maximum likelihood or a two-step consistent estimator" (StataCorp, 2015, p. 18); I used full maximum likelihood in this study. "The endogenous binary-variable model is a linear potential-outcome model that allows for a specific correlation structure between the unobservables that affect the treatment and the unobservables that affect the potential outcomes" (StataCorp,2015, p.20).

[4] $$y_j = \mathbf{x}_j\boldsymbol{\beta} + \delta t_j + \epsilon_j$$
$$t_j = \begin{cases} 1, & \text{if } \mathbf{w}_j\boldsymbol{\gamma} + u_j > 0 \\ 0, & \text{otherwise} \end{cases}$$

errors. The estimated correlation between the treatment-assignment errors and the outcome errors is 0.01818, which is not significant because 'rho' includes '0'[5]. In other words, this difference indicates that unobserved factors that raise observed export performance do not tend to occur with unobserved factors that decrease BG membership. More specifically, the coefficient of BGA in Equ.3, based on mediation analysis, is -.488 (not significant, see Table 2-3, Model A.2), and the coefficient of BGA in Equ.4, based on Endogenous Treatment Effects model, was -.98 (not significant, results available from the first author). Accordingly, with no significant difference between the coefficients of BGA in the two models, the robustness of my results are confirmed.

2.10. DISCUSSION

Taking up the challenge posed by George and his colleagues (2016), I address the pressing question of whether SSA group affiliated SMEs can overcome the hurdle of imperfect markets to acquire the resources needed to engage in international trade. My main contribution to the literature is to document the ways in which BGs can be instrumental in mediating resources to affiliated SMEs in a context where contract enforcement is costly. I find that affiliation with a BG improves a firm's access to information technology, qualified human resources, and formal credit, and further, that these resources improve affiliated firms' export performance. Contrary to the expectations established in the prior literature (Biggs & Shah, 2006; Fafchamps, 2004), I do not find that BGs significantly improve their affiliates' access to informal credit. Nevertheless, my results support the view that, compared with unaffiliated SMEs, group membership is likely to provide a resource bundle sufficient to improve access to foreign markets. Indeed, given the literature that suggests informal credit sharing is not a durable and robust organizational form capable of sustaining international trade, I speculate that contemporary African BGs captured in

[5] 95% Conf. interval= -0.052 , 0.088; LR test of indep. Eqns . (rho=0); chi2 (1)=0 .24, Prob>chi2=0.624.

WBES may have developed beyond informal credit sharing to provide a wider range of resources. If so, African BGs may now begin to resemble BGs in some parts of Asia and represent a more robust organizational structure capable of promoting African competitiveness in the world economy. Nevertheless, my cross-sectional data cannot determine the dynamics of business group evolution, but the negative findings with respect to informal credit are indicative of a positive trend. Further longitudinal research is indicated.

As many scholars have attested, networking and associational linkages are essential factors in operating a successful business in Africa. My findings suggest that the group structure can be a more effective organizing mechanism than some of the alternative forms of associations that have been advanced as a developmental instrument, such as industrial clusters and participation in global commodity chains. These policy solutions have not always delivered on their developmental promise. Clusters have proved very difficult to induce through policy mechanisms (Becattini et al., 2014), and global commodity chains often embody unbalanced power relations where core firms, that control access to primary markets and owning key technologies, can skim off the lion's share of economic rents (Gereffi, Humphrey, & Sturgeon, 2005). Unlike clusters and global commodity chains, BGs appear to be spontaneously created and firmly in the hands of domestic interests. Since superior export performance is generally held to be indicative of a country's international competitiveness (Porter, 1990), advocates of the BG structure are able to lay claim to it being an effective economic development tool (Fisman & Khanna 2004; Khanna, 2000).

Nevertheless, I must temper my claims in this respect due to limitations with WBES data regarding the structure, origins, and functioning of BGs and their affiliates. While WBES data establishes that affiliated SMEs are legally independent entities with substantial autonomy over financial and managerial decisions, but which are also self-identified as affiliates of a larger group,

yet these data do not provide a fine-grained insight into the nature of their formation nor the underlying basis for member trust in the group structure. Kinship has provided the primary axes of trust in BGs in many parts of East and Southeast Asia. In these contexts, family-owned BGs have often proved to be an appropriate vehicle for export-oriented economic development (Carney & Gedajlovic, 2002). As Kennedy (1988) explains, the extensive nature of African kinship relations has precluded family BGs from playing a similar role in Africa, consequently the family-based BG in the Asian model is not well established in Africa.

We contribute to the literature on BGs and their role as facilitators of international entrepreneurship. While the political economy literature has noted the important role of BGs in facilitating export-oriented development in emerging markets, hitherto, the focus of BG management and international business has been mainly on their capacity for facilitating FDI. I show the potentially useful developmental role of the group form in fragile and ethnically fragmented states. However, I am alert to the potential disadvantages of the form in the specific context of Africa. As the axis of trust and affiliation for BG formation is ethnic identity in SSA, and, as I noted above, scholars often refer to such groups as networks, the definition of network in this work is very much analogous to the BGs contained in the WBES data. African scholarship has emphasized that SMEs solve market failure problems by creating private governance systems in the form of long-term business relationships in ethnically-based groups (Biggs & Shah, 2006; Fafchamps, 1997, 2000). While I find that such groups improve the international performance of group members, scholars have expressed concern that such affiliation has negative consequences for outsiders, in particular for indigenous African owned firms (Kennedy, 1988; Biggs & Shah, 2006). Within, group trust promotes economic activity among members, but such affiliation comes at the cost of social exclusion. Specifically, ethnic BGs tend to be ethnically homogenous (Davis et al., 2001) and typically restrict entry into their

groups. Ethnic minorities that prefer to trade amongst themselves are more likely to be embedded in their communities and have first-hand knowledge of one another's reputation, which can be an effective basis for trust-based systems of exchange. In addition, ethnic minorities may encounter difficulties in enforcing contracts with indigenous African businesses because there is the potential for conflict and because minorities may have less political leverage (Chua, 1998).

This line of argument suggests that in ethnically divided societies, entrepreneurs' incentives for establishing arm's-length market exchange relationships are weakened, and underlying tensions generate a preference for trading among insiders. But this dynamic undermines the establishment of fully functioning market institutions and frustrates the intentions of the policy community seeking to build an infrastructure of market supporting institutions. The ambiguous role of ethnic minority commercial elites is not unique to Africa; indeed, the prevalence of ethnic minority entrepreneurial elites is common in many parts of the world. Within, group solidarity provides trading advantages for exclusive ethnic-based groups and can become a stable and self-perpetuating organization form. Moreover, policies of economic liberalization associated with the construction of market-oriented institutions can increase income and wealth inequality. Ethnic commercial elites situated in economically efficient BGs often possess more resources and are well placed to benefit from economic liberalization. Though, as the eminent political scientist Samuel Huntington observes, market liberalization can impose harsh economic penalties in some sectors of society as "subsidies are ended, taxes are raised, budgets are balanced, workers are discharged, prices rise, wages fall… Enormous economic costs must be paid in order to achieve the promised long-term economic Nirvana" (Huntington, 1993:25). Tensions between winners and losers from economic liberalization have recently become prominent in advanced economies, but in less developed economies they are characterized by weak state capacities, and such tensions are a long-simmering feature of economic

life. In the worst case, minority status makes some firms easy targets for political discrimination and periodic violence, as tragically witnessed in the Rwandan conflict between the Tutsi minority and Hutu majority (Chua, 1998). Unhappily, these tensions reinforce group solidarity and closure, inhibiting the emergence of fully functional markets.

The policy and managerial implications for African BGs are vexing. The policy advice stemming from the institutional void theory suggests that BGs are a transitional phenomenon. Advocates of the group structure advise that "governments in developing countries must focus on building up… market institutions in the long term. The dismantling of business groups will, I believe, follow naturally once these institutions are in place" (Khanna & Palepu, 1999: 126). However, the broader effect of self-perpetuating BGs give rise to an institutional 'lock-in' through which stable ethnic groups engage in static patterns of exclusive business exchange. Biggs and Shah (2006) argue that in slow growth African economies, where many transactions are based on the exchange of primary products and simple manufacturing, there is little scope for innovation or for the emergence of actors which disrupt the functioning of stable networks. In these contexts, such groups are unlikely to be associated with innovation and novel business models. Policy communities have responded to the closure and exclusivity of ethnically homogenous commercial elites by engaging in indigenization policies designed to bring about wider participation in business ownership. While these policies often produce short-term improvements in non-ethnic ownership, as these policies evolve, entrepreneurs tend to create dualistic ownership structures, wherein indigenous entrepreneurs frequently occupy non-functional 'front office' positions or act as a nominal member of the board of directors, while incumbent entrepreneurs operate the firm in a business as usual manner. In the longer-term policies favoring indigenous entrepreneurs tend to lapse into rent-seeking and continued protectionism, serving as a disincentive to entrepreneurial learning and more efficient resource allocation.

2.11. CONCLUSION

The persistence of institutional voids is identified to be the greatest challenge to business in Africa (George et al., 2016). I have shown that BGs represents an organizing mechanism for navigating institutional voids by channeling resources to group affiliates and helping them improve their international performance. However, research from economic and social development suggests that BGs may create a lock-in effect that reduces society's ability to develop efficient market supporting institutions. Frustration with the slow progress in this direction may persuade the policy community to search elsewhere for solutions. Over the past decade, China has become Africa's largest trading partner and a source of significant FDI. Much of this trade and investment is funneled through state-owned enterprises that are likely to be indifferent to the logic of market supporting institutions, yet may offer an alternative option for economic development. Further investigation is warranted.

CHAPTER 3

3. BUSINESS GROUP SOLIDARITY AND COMPETITIVENESS: THE CASE OF AFRICA'S ETHNIC BUSINESS GROUPS

3.1.ABSTRACT

To facilitate interfirm trust and exchange, business groups are typically organized along an axis of solidarity such as kinship, religion, or political identity. In this paper, I consider whether business group solidarity, based upon the ethnic identity of affiliate owners, can be a basis for business group competitiveness. Based upon the World Bank's Enterprise Surveys (WBES, 2015), of some 24 Sub-Saharan African countries and over 8000 firms, I identify differential affiliate performance based upon the self-identified ethnicity of firm owners. I contribute to understandings of the origins of business group heterogeneity and the potential sources and limits to their competitiveness.

Keywords: *Business group affiliation, Competitiveness, Owner ethnicity, Sub-Saharan Africa*

3.2. INTRODUCTION

Business Group (BG) solidarity refers to an identity based on a common social bond by group affiliated firms and their personnel (Granovetter, 2005). A shared identity provides the basis of interpersonal trust and group loyalty among affiliates and underpins BGs competitiveness (Ramachandran, Manikandan, & Pant, 2013). Perhaps the most common form of solidarity among BGs around the world is kinship, the association of affiliates with a business-family (Masulis, Pham, & Zein, 2011). However, group affiliations may also form along other axes of solidarity, such as ethnicity, religion, geographic region, political party, and even school attendance (Granovetter, 1995). In ethnically diverse nations, ethnicity may be a prominent source of solidarity and can engender an ethnically homogenous entrepreneurial class (Chua, 1998; Davis, Trebilcock, & Heys, 2000). Indeed, in the case of Sub-Saharan Africa, a considerable body of research has found that the entrepreneurial class segments along ethnic lines and ethnicity are a principal basis of BG solidarity (Biggs & Shah, 2006; Fafchamps, 2004; Kennedy, 1988). Whether BGs formed based on ethnic solidarity can achieve comparable levels of competitiveness to those based upon kinship, for example, as is the case with Korea or India, is underexplored in the international business literature.

A widely accepted explanation for BG competitiveness derives from their ability to establish internal markets for capital, executives and skilled personnel, and know-how in the context of weak or missing market-supporting institutions (Khanna & Palepu, 2010). Missing institutions, such as minority shareholder and intellectual property protection, an efficient judiciary, functioning capital markets, and high-quality education and training institutions, harms independent, unaffiliated firms who will encounter high transaction costs with business partners and difficulties assembling the resource needed for growth. The group competitiveness principle suggests that because BG's internalize the provision of these factors, they enjoy competitive

advantage over independent firms. In this regard, research shows that BGs can promote economic development (Fisman & Khanna, 2004) because affiliates can engage in more complex transactions that would otherwise go unrealized when firms are limited to anonymous spot market transactions. Khanna and Palepu (1999) proposed that states should build a soft-infrastructure of market-supporting institutions that enable independent firms to become competitive outside the arena of a BG. If this occurs, BGs affiliates should lose competitiveness, relative to independent firms.

The construction of market-supporting institutions involves the development of appropriate legislation, corporate codes of governance, and various market intermediaries, such as stock exchanges and credit rating bureaus (Khanna & Palepu, 1997). However, *de jure* and *de facto* institutions may diverge (Khanna, Kogan, & Palepu, 2006) because legislators can swiftly establish formal/legal institutions, but it does not follow that market participants will make use of them. Market supporting institutions can be cognitively unfamiliar, and existing market participants can habituate themselves to informal modes of contract enforcement (Peng, 2003). Consequently, it can take years before new market supporting institutions become active (Campbell, 2004).

Further, BGs are necessarily exclusionary organizations, whose benefits accrue primarily for affiliate firms, who may prefer to continue working within the group framework, with its known benefits. While group trust promotes exchange among affiliates, it also comes at the cost of social exclusion. Africa's ethnically segmented BGs will often restrict entry into their group to co-ethnic owners, and do not intersect with market participants beyond their ethnic group (Kennedy, 1988). Indeed, the cohesion and stability of these groups can give rise to institutional ‘stasis,' producing a ‘lock-in’ to stable patterns of exclusionary exchange (Biggs & Shah, 2006), which may limit firm capacity for innovation and adaptation to changing market conditions.

Rivalrous interethnic identities were promoted in Africa by colonial-era elites, who fostered division between ethnic groups as a means of consolidating their authority (Lynch, 2018).

Theoretically, I address the question of ethnic BG competitiveness from the perspective of solidarity. Sociologist Emile Durkheim (1997/1893) differentiated between *mechanical solidarity* and *organic solidarity.* The former is frequently found in rural and traditional societies and is based upon mutual acquaintance and cultural homogeneity. Identities formed based on mechanical solidarity can underpin multiple forms of exclusion and market segmentation (Yenkey, 2018). In contrast, organic solidarity is more commonly observed in modern societies and is based upon role differentiation, heterogeneity, and transactional anonymity. It is organic solidarity that supports a complex division of labour and exchange in a market economy. Social theorists argue that market construction requires varied, layered, and complex identities to foster a functioning market economy (Abascal & Baldari, 2015; Portes & Vickstrom, 2011). However, African ethnic identities are fluid, permeable, and overlapping and subject to ongoing renegotiation, such that identities established in the colonial era may fade over time (Lynch, 2018). I reason that fading ethnic identities undermine group solidarity, enabling greater social inclusion, and promoting trust in market-supporting institutions.

3.3.LITERATURE: AFRICAN BUSINESS GROUPS

A recent editorial declares that the most significant challenge for Africa is the persistence of missing institutions “understood as the absence of market-supporting institutions… and contract enforcement mechanisms" (George et al., 2016, p.377). The authors identify three priorities for management research in Africa: how firms handle missing institutions, develop competitive capabilities, and identify and seize opportunities. Indeed, some research suggests that African domestic firms can creatively exploit institutional voids to compete with the better-

resourced foreign competition (Mol, Stadler, & Ariño, 2017). I approach this missing institution's agenda from a BG solidarity perspective by drawing upon insights from social capital theory and the facilitation of exchange, where reliance on market institutions is weak (Fafchamps, 2004). I do so because the strength of social capital and its capacity for exchange facilitation are particularly sensitive to the role of ethnic identity (Fafchamps, 2004) in establishing market-supporting institutions. BGs have a long history in Sub-Saharan Africa.

A product of Africa's colonial history, European BGs were a core component of the African economy for over a century. Described as merchant-multinationals (Jones, 2000), investment groups (Chapman, 1985), and networks (Fafchamps, 2004), as well as BGs (Jones & Wale, 1988), the Colonial-era BGs were organized as free-standing firms, associated with a European-based parent, that coordinated two-way trade between Africa and Europe (Wilkins, 1988). The African affiliate exported the product of mines, plantations, and timber operations to Europe while importing capital goods, arranging insurance, shipping, and local logistics. For example, in East Africa, Jardine-Matheson operated tea and coffee plantations. In West Africa, the Niger Company and the United African Company diversified across a wide range of agricultural and mining industries. In South Africa, the most important colonial groups, such as Anglo-American and De Beers, were focused on mining precious metals and diamonds (Goldstein, 2010).

Post-WWII saw the establishment of postcolonial states, who sought to indigenize the civil service and, in several cases, corporate ownership. Many postcolonial states adopted the Soviet-style model of a state-owned enterprise in important industries (Hobsbawn, 1994), but most lacked the administrative capacity to execute central planning (Evans, 1996). In this environment, colonial-era BGs could no longer expect the support found under previously accommodating colonial administrators and most sought to reduce their exposure to nationalist

post-colonial states. To reduce the risk of expropriation, BGs repatriated their capital to friendlier jurisdictions, but continued to operate, often with different organizational structures and product-market strategies (Jones, 2000). In the period leading up to the ending of apartheid in South Africa, colonial-era businesses began to divest their African assets and shifted their primary listing to European stock exchanges (Jones, 2000). Thus, while these businesses continue to operate in Africa, they often do so as wholly-owned subsidiaries of multinational enterprises (Goldstein, 2010).

Also, a product of the colonial era, another type of enterprise thrived in Sub-Saharan Africa. These were relatively small and specialized trading firms catering to areas of the African economy that were of little interest to the colonial authorities, mostly serving the indigenous African population, mainly with import-export, wholesaling, and transportation (Kennedy, 1988; Ghai & Ghai, 1965). Research finds that these businesses were generally owned and operated by entrepreneurs from South Asian or Middle Eastern ethnic minorities, whose prevalence across the region is well documented (Biggs & Shah, 2006; Fafchamps, 2000; Isaac, 1974). Chua (1998, p.21) notes that “India's Gujarati have been prominent or predominant in business enterprises from Fiji to virtually the entire eastern coast of the African continent." In the West African states of Sierra Leone, Gambia, Ghana, Benin, and Liberia, a Lebanese diaspora formed ethnic-based BGs (Davis et al., 2001). In southern Africa, including South Africa, Mozambique, and Zimbabwe, the minority business elite is composed of the European diaspora. While some exported their capital following the arrival of postcolonial states, most minorities chose to stay on after independence. Moreover, in the vacant areas left by the departing colonial elites, indigenous African entrepreneurs started to appear and similarly organized as ethnically based networks (Kennedy, 1988). Fafchamps (2004) extensively documents the specialization of indigenous African groups into different economic activities within the same country.

Despite their prevalence in the region, BGs have escaped attention from scholars. One reason for this is data limitations; official statistics left many African groups undocumented because of the prevalence of relatively small firms. It is challenging to obtain accounts and published indicators for individual entrepreneurs or groups of companies beyond turnover and employment figures. However, the WBES data has now begun to address the issue of data availability.

The second reason for the scarcity of Africa BG research is that researchers describe African groups as 'networks' (Biggs & Shah, 2006; Biggs et al., 2002; Boly et al., 2014). The description of BGs as a type of network comprised of independent firms linked by recurrent contracting within a stable group of other firms. Indeed, Biggs and Shah specifically describe African trading networks this way: "we define a network to include a broader set of economic functions where members of the business group or 'club' share information and informally enforce contracts" (2006, p.3047). When referring to insider agents from ethnically homogenous communities, Fafchamps (2004, p.303) uses the terms networks and business group interchangeably. Kennedy (1988, p.187), refers to Africa's trading networks as a "distinctive type of African business venture based on a series of semi-independent branch firms yet linked to a parent enterprise."

Finally, I note the ethnic community-based BGs have emerged as the dominant axis of solidarity over kinship-based groups. Entrepreneurship scholars have identified intensive kinship obligations among Sub-Saharan Africa families (Smith, 2009), which tend to encourage families to establish informal firms (Khavul, Bruton, & Wood, 2009). While family-owned informal firms enjoy a broad legitimacy, informal firms are not conducive to the emergence of growth-oriented corporate structures, capable of sustaining international capabilities (Kennedy, 1988). Scholars agree that kinship networks can provide resources to entrepreneurs, but the cost of

raising resources through these means outweigh the benefits, with adverse effects on overall performance (Khayesi, George, & Antonakis, 2014). Kennedy (1988) explains that rather than supporting enterprise growth, intensive kinship links among indigenous Africans limit capital accumulation since entrepreneurs have difficulty in resisting family members' claims. Moderately prosperous entrepreneurs are the object of unceasing family petitions and are "expected to finance the education of nephews and nieces and younger siblings or even provide more or less permanent support for widowed or deserted sisters …and … demands for employment irrespective of their qualifications" (1988, p. 169). With this background, I now provide the logic for my three hypotheses.

3.4.THE BUSINESS GROUP COMPETITIVENESS PRINCIPLE

That BGs improve the international competitiveness of their affiliates is a well-established principle in the literature (Chang, 1995; Elango & Pattnaik, 2007; Mahmood, Zhu & Zajac, 2011). I begin with a baseline hypothesis stating the widely held view of the competitiveness of emerging market BGs, with particular reference to the arguments made about African BG competitiveness. This view suggests missing institutions and attendant weaknesses in factor markets heighten resource-assembly concerns for firms (Hoskisson, Wright, Filatotchev & Peng, 2013). Secondly, the most acknowledged way BG solidarity can enhance affiliates' competitiveness is by reducing the cost of contracting within the group (Granovetter, 2005). Research from around the world suggests BGs can form internal markets for three factors: credit and equity, skilled executives and other types of scarce labour, and intangible assets such as know-how and information (Chang & Hong, 2000; Siegel & Choudhury, 2012).

Consistent with the BG competitiveness principle, developmental theorists in Africa suggest credit-based market exchange is difficult due to weak public institutions protecting

property rights and contracts. Most firms avoid contractual default by making spot market transactions (Biggs, Raturi, & Srivastava, 2002; Fafchamps, 2000). BGs enable exchange through credit as affiliates create relational contracts based upon learning and prior experience.

BG affiliation can overcome barriers to lending arising from asymmetric information between borrowers and lenders. This is because group member lenders typically have better information than non-members about borrowers' opportunities and can make better appraisals of credit risk (Biggs, Ratury, Srivastava, 2002). Trade credit from suppliers within an entrepreneur's ethnic community is a vital source of financing (Fisman, 2003), and trade credit is negatively related to inventory shortages and positively associated with capacity utilization (Fisman, 2001). Affiliates who default on their credit payments are likely to be excluded from future group-related transactions. Thus, affiliates have strong incentives to honour their debts (Fafchamps, 2004). BG affiliation can also ease access to bank financing, which may be more eager to provide credit to firms with ties a reputable group.

Secondly, in underdeveloped economies, firms typically face human capital deficits and low employee skill levels and are encouraged to seek partnerships with foreign firms (Wang & Cuervo-Cazurra, 2017). However, Khanna and Palepu (2010) suggest that BGs can offset factor market imperfections for skilled employees due to the shortage of educational and training institutions. Khanna & Palepu (2010) propose that groups can internalize this function by developing skilled project teams and task forces that can be utilized by affiliates for special projects. Scholars agree that human capital voids are particularly acute in Sub-Saharan Africa (Wang & Cuervo-Cazurra, 2017; Kiggundu, 2002). Ethnic-based groups may enjoy an advantage in identifying trustworthy and skilled employees within their networks, and co-ethnic employees are less inclined toward opportunism due to the fear of ostracism (Chua, 1998).

Third, a major challenge for emerging market firms is to catch up with management

practices and technical know-how found in firms located in institutionally mature economies (Bloom & Van Reenen, 2010). In this respect, many local firms will begin this process by absorbing intermediate levels of technology that enables progress on the international productivity frontier (Hobday, 1995). In the context of Sub-Saharan Africa, I expect BG project teams and taskforces will have a better capacity to provide their affiliates with access to better management practices and intermediate technologies. For example, Tajeddin and Carney (2018) found that BGs mediate the adoption of information and communications technologies among smaller African group affiliates. Hence, by enabling exchange in credit, skilled human resources, and technology, and by disseminating better technologies and management practices, BGs can raise their affiliates' capacities to compete in international markets (Lamin, 2013). A baseline hypothesis suggests:

H1: BG affiliates will outperform unaffiliated firms in terms of their international competitiveness.

3.5. ERODING COMPETITIVENESS AMONG EXPATRIATE ETHNIC BG AFFILIATES?

BG research identifies a dark side to their functioning (Pattnaik, Lu, & Gaur, 2018; Scharfstein & Stein, 2000). While solidarity enables trust and contract enforcement among insiders, BG exclusivity reduces access to resources available beyond the group. Compared to the baseline hypotheses suggesting BG competitiveness, with this hypothesis, I reason that competitiveness will erode for BGs formed among long-established expatriate ethnic communities, specifically the affiliates of European, Middle Eastern, and Southeast Asian owners. I offer four arguments for this position: exclusion costs, group stagnation, indigenous entrepreneurial catch-up, and market construction.

First, concerning exclusion costs: it is useful to distinguish between exclusion where

discrimination provides economic benefits and cases where contracting parties discriminate because they prefer not to contract with members of other groups. In the first case, I can understand discrimination as an advantage arising from social capital endowments that enable contracting parties to reduce transaction costs of searching, screening, and verifying the reliability of trading partners. The second case is described as invidious discrimination (Becker, 2010|1957) because contracting parties eschew trading with individuals from other ethnic groups, but gain no economic advantage. Invidious discrimination diminishes the number of firms with which they can transact. Becker (2010) argues that groups displaying a strong taste for invidious discrimination will tend to be disadvantaged as compared to firms that have a weaker preference for discrimination.

Secondly, concerning stagnation: to the extent that members of a particular ethnic community group socialize primarily with each other, they are more likely to develop a closed network with many redundant links (Burt, 2000). Entrepreneurs may readily share information in their networks but may ignore or devalue information from outgroup sources. Such communities can reproduce themselves over time. Nevertheless, the market segmentation arising from these dynamics can produce several inertial effects on business innovation. The first dynamic is that groups that are familiar with their particular type of business activity will continue to invest in the activity. For example, if an expatriate community specializes in commodity trading, new entrepreneurs from the community will also specialize in that area due to the business contacts and sponsors they have within the community. Meanwhile, if another line of activity, for example, network engineering, is small, new entrepreneurs may avoid it due to the absence of intragroup contacts (Fafchamps, 2004). Hence, closed communities may fail to diversify into new business lines and intensify competition in existing lines.

Relatedly, for entrepreneurs receiving intra-community information, it helps to reduce their search, screening, and verification costs, so that they may be unwilling to spend resources screening individuals from outside their community. These transaction cost savings represent sunk costs because firms incur them only once. Once incurred, it is in the interest of the parties to continue trading with each other, with little incentive to find new, extra-group trading partners. Hence, information about opportunities and better business practices from individuals outside of the ethnic group may remain undiscovered (Yenkey, 2015), reducing the flow of stimulus for innovation. Biggs and Shah (2006) conclude that there is little scope for the appearance of innovative new entrants in low-growth African economies, where the majority of the business activity is in primary products and routine manufacturing. In the absence of actors that could shake up the unchanging equilibrium of long-standing networks, they expect "lock-in effects of stable business networks and static patterns of business exchanged is reinforced" (Biggs & Shah, 2006, p.306). The net effect of these dynamics is to produce stagnation and underinvestment in innovation or entry into new business lines.

Third, concerning indigenous entrepreneurial catch-up, much of the research attributes minority ethnic group's success to their international linkages. Research suggests that ethnic groups will maintain their overseas trading connections and links to their country of origin. Rauch & Trindade (2002) find that ethnic diaspora relies on their historical ties between home and adopted country to facilitate trade. In the colonial era, South Asian, Middle Eastern, and European entrepreneurs were accustomed to credit, the concept of interest, and were able to read and produce account books (Kennedy, 1988; Oonk, 2006). Consequently, they were more able to thrive in the market economy.

However, in the postcolonial era, indigenous African groups have eroded these historical advantages. For example, as early as the 1960s, Isaac (1975) reports that African competition was

driving out the dominant Lebanese ethnic minority in Sierra Leone from their traditional lines of business. Moreover, indigenous African entrepreneurs are accumulating international trade experience arising from overseas education and employment among Africa's European diaspora (Styan, 2007). Research finds that African entrepreneurs are establishing continental networks supporting intra-regional trade through international ventures (McDade & Spring, 2005). These new cosmopolitan entrepreneurs may become the focal point for a greater international orientation, and potentially leverage the beneficial resource advantage of BG affiliation. Thus, I expect the dynamism and advancement of indigenous entrepreneurs will offset the former advantages of ethnic group affiliation, thereby reducing their relative competitiveness.

Fourth, recent research in Africa points to the emergence of mechanisms that suggest a departure from mechanical solidarity with one's ethnic group, toward more organic solidarity, a movement that can underpin market construction. In a study of investor recruitment into the Nairobi Stock Market, Yenkey (2015) explores how ethnically diverse investors can identify as members of a common market instead of members of discrete and rivalrous social groups. Yenkey (2015) identifies several mechanisms that moderate interethnic distrust, including interethnic residential and religious integration, and use of the national language rather than an ethnic language in investor advertising campaigns. Government promotion of initial public offerings seeks to frame the stock exchange as a shared, national social identity. In a study of ethnic obligation to one's ethnic group in Ghana, Zoogah and Akoto (2018) find that economically deprived groups tend to agree with the statement "once in office, elected leaders are obliged to help their home community or group first." However, adopters of new technology, the employed, and wealthier individuals are less likely to support the statement, emphasizing instead the importance of elected officials who emphasize national obligations over sub-ethnic obligations.

Recent innovations in new forms of credit and insurance are suggestive of the possibility for broader access to financial instruments. For example, initiatives designed to provide a legal title for land tenure is believed to help formerly marginalized agricultural communities gain access to formal credit (Rauch, Beckmann, Neubert, & Rettberg, 2016). The creation of trusts for farmers in Tanzania and Zimbabwe have also expanded credit access (Chapoto & Aboagye, 2017). Similarly, banking reforms have liberalized lending to small and medium-sized manufacturers in Ethiopia and Kenya (Fanta, 2012; Mwega, 2016). These developments suggest that market construction and other policies that reduce dependence upon exclusiveness of ethnic subgroups will improve conditions for innovation and new investment that can weaken the grip of closed ethnic networks. I suggest the fourfold dynamic I describe above will erode the competitiveness of ethnic BGs relative to independent firms. Two factors, exclusion costs and the prospect of stagnation among a stable group of transacting partners, will lower returns to the group principle. Two other factors, entrepreneurial catch-up and the construction of market-supporting institutions, should improve the position of independent firms. Accordingly, I hypotheses that this double movement will reduce the difference between ethnic BG affiliates and independent firms:

H2: Long-established expatriate ethnic controlled group affiliated firms will neither underperform nor outperform unaffiliated firms.

3.6.CHINA'S BGS IN AFRICA: NEWCOMER EXCEPTIONALISM

With this hypothesis, I argue that the international competitiveness of China's BG affiliates will differ from those described in hypothesis two above. BGs controlled by Chinese owners in Africa are relative newcomers to the region, and I reason that their international competitiveness will continue to benefit from the group principle I described in hypothesis one. China's business groups are both private and state-owned (Yiu, Ng, & Ma, 2013), and the latter have enjoyed

substantial state assistance to internationalize their operations in a 'go out' strategy whose motive is asset seeking (Deng, 2009).

While much of the Chinese investment targets the acquisition of commodities, there is also substantial potential for export-oriented manufacturing, promising potential for structural transformation of African manufacturing (Brautigan & Tang 2014; Sun, 2017). Some of the high-profile State investments are in special economic zones (SEZs), in which African states provide land and Chinese business groups build transportation, telecommunications, and other infrastructure. In a process described as "going global in groups," Brautigam and Tang (2014) recount how clusters of export-oriented firms work near other group members. This internationalization process resembles a follow-the-leader strategy practiced by Japanese business groups' (keiretsu) foreign direct investments in the 1990s. In this process, the lead company (e.g., Toyota) would establish a large-scale assembly plant, co-located with its traditional Japanese component suppliers. For example, Martin (1995) and his colleagues document investments by eight Japanese auto assemblers combined with some 170 Japanese component manufacturers, which re-created some 60 percent of their linkages with traditional suppliers.

The Chinese government is known to negotiate collectively with national governments for state and private firms in the context of Africa (Li et al., 2013). China has established seven special economic zones in Africa since 2006 (Brautigam & Tang, 2014), and the number is increasing (Feng & Pilling, 2019). Some SEZs focus on commodities, such as the Lusaka, Zambia zone, led by the state-owned China Nonferrous Metals Corporation. This zone contains Chinese firms specializing in mining, copper smelting, and other copper and cobalt related products. State-owned firms do not operate all SEZs. The Guandong New South Group, a privately-owned conglomerate with interests related to medicine, real estate, and mining, operates the Ogun state SEZ in Nigeria. After seven years of operation, the zone has some 50 registered

companies consisting of mainly export-oriented factory businesses, in ceramics, plastics, furniture, and footwear (Feng & Pilling, 2019).

Chinese investment in Africa is not limited to large state and private business groups. The management consultancy McKinsey estimates more than 10,000 Chinese businesses are operating, and 90 percent of them are privately owned. Some observers believe that independent Chinese entrepreneurs are spearheading the restructuring of African manufacturing because of a willingness to take risks that Chinese state-owned enterprises will not (Sun, 2017). However, I expect that independent Chinese owned firms, in the African context, will not achieve the same level of competitiveness as Chinese owned affiliates of business groups due to the advantages of the group principle. The leading Chinese firms in African SEZ are required to have a minimum turnover requirement of US$2 billion.

Moreover, the Chinese Ministry of foreign trade provides qualified companies located in the zones with subsidies and long-term loans. Some provinces and municipalities provide additional incentives for local firms to relocate to the zones (Brautigan & Tang, 2014). Compared with African-based firms, Chinese BG affiliates typically have better-skilled labour, plant & equipment, and technical know-how. Indeed, a frequent criticism of Chinese firms is that they bring their skilled labour and capital goods and form few linkages to the local economy (Morrisey, 2012). The selection process for access to these resources suggests that these affiliates will be technically competent and high-performing entities, even by the standards set by China's highly competitive environment (Feng & Pilling, 2019). Finally, BG affiliated firms are likely to benefit from non-market advantages. Since the Chinese government is supportive of these ventures, they are likely to influence the senior African decision-makers in their host environments.

H 3: Chinese owned BG affiliates will outperform unaffiliated firms in terms of their international competitiveness

We summarize my theoretical framework in Figure 3-1.

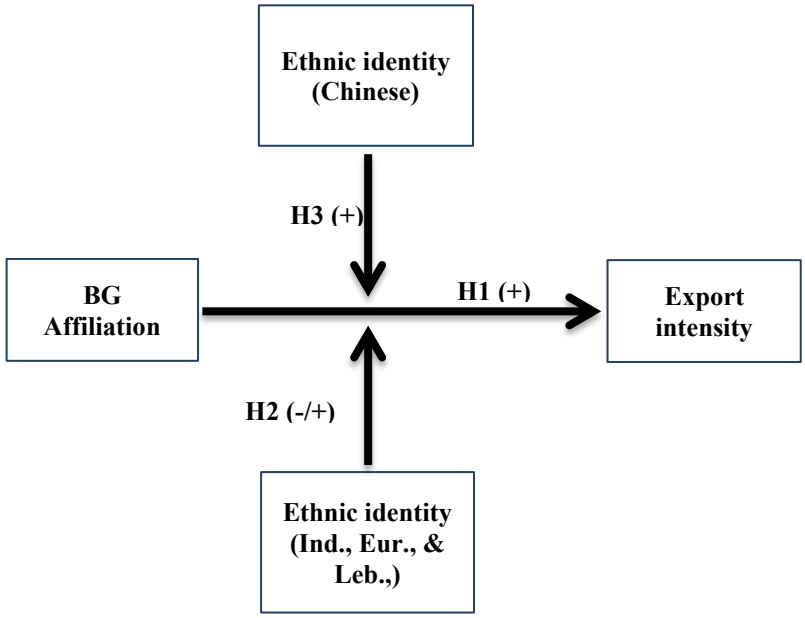

Figure 3-1. The conceptual framework of this study

3.7.METHODS

3.7.1. Data

We draw my data from the World Bank's Enterprise Survey (WBES, 2015). The WBES provides comprehensive coverage of less developed and emerging economies, including firm-level data from 125,000 firms across 139 countries. The World Bank collects enterprise survey data to assess the investment climate and to also gain insight into firm behaviour and performance in these settings. Local World Bank staff administer the survey with personal, one-on-one interviews with firm representatives, who are usually top managers or functional managers with knowledge of their firm's overall operations. The use of local staff to administer the survey suggests that the

interviewer will be familiar with the local language and culture. Given its rigorous approach and resulting reliability, the WBES data have been used widely in economics (e.g., Harrison, Lin, & Xu, 2014; Mitton, 2016), international business (Cuervo-Cazurra, 2016; Nuruzzaman, Gaur, & Sambharya, 2019), and in studies of BG affiliation (Castellacci, 2015; Tajeddin & Carney, 2018). The data provide information on firm ownership, the nationality of the firm's owner, and group affiliation, as well as several indicators of export activity, technology sophistication, access to internal and external financing, and resource management practices, as well as data for my control variables. These data also provide distinctions between ethnic minority and indigenous African business ownership. For this study, I use the most recent wave of surveys from the data set sample conducted between 2006 and 2015, which contain 8,672 firms in 24 Sub-Saharan African countries. Thus, WBES data address the vexing problem of getting good-firm specific data in the African context (Mol et al., 2017).

Table 3-1.Variable definition

	Variable	Definition	Source
DV.	Export intensity	Sales exported directly as the percentage of total sales	WBES
INV.	Business group affiliation	Dummy indicating whether firms being part of a larger enterprise	Calculated from WBES
Mod. V.	Ethnicity	The Ethnic identity of the current owner	WBES
Control variables	Firm size	Logged value of permanent workers	WBES
	Firm age	Logged value of the number of years between the firm's founding year and the year of its interview	WBES
	Foreign own.	Ownership of Private foreign individuals, companies, or organizations.	WBES
	International experience	The number of years of exporting.	Calculated from WBES
	GDP/Export	Exports as a percentage of GDP	The Global Competitiveness Report (GCR)
	Management practice	Number of practices that a firm applied in the management	Calculated from WBES
	Financial access	Number of means that a firm adopted in acquiring financial access	Calculated from WBES
	DBR_ (DTF)	Doing Business Distant to Frontier score	Easy of Doing Business
	GDP_PCC	GDP Per Capita Consumption	GCR
	Domestic own.	Ownership of domestic individuals, companies or organizations	WBES

3.8.VARIABLES AND MEASUREMENT

Dependent variable. As exporting is considered to be a leading indicator of firm competitiveness (Porter, 1990; Fainshmidt, Smith Judge, 2016), I measure competitiveness with export intensity as the dependent variable. Export intensity represents the percent of revenues that are derived from direct exports.

Independent variable. The most common indicator of BG-affiliation is a public firm listed that is also partly owned by another firm at a variable threshold level or identified as such by country-specific sources (Carney et al., 2011); idiosyncratic country-specific identifications and nonstandard ownership thresholds make cross-national BG comparisons difficult. The WBES survey data is ideal for assessing BG-affiliation, as it uses a standard definition of group affiliation. The data from WBES also meets the criteria for group affiliation identified in the literature, namely that affiliates are legally independent entities that maintain a stable relationship with another firm (Castellacci, 2015a). The WBES identifies affiliated firms by the following conditions: enterprises must be legally registered legally for tax purposes, make financial decisions independently, and produce financial statements for their firm, separate from the group, manage and control their own payroll, and be owned privately by domestic individuals, companies, or organizations. Affiliated firms are those that self-identify as not a 'firm on its own,' but connected to a larger enterprise. By this definition, BG affiliation is prevalent among African businesses, with some 15 percent of privately owned Sub-Saharan African firms reporting a group affiliation (see Table 3-2).

Moderating variables. The WBES provides the nationality of the firm`s owner which can help us in determining the impact of minority entrepreneurship on the export intensity of the firm. To measure the ethnic identity of entrepreneurs, I used the question: "What is the nationality of origin of the current largest owner?" In response, informants are asked to select from six options: Indigenous African, Indian, Middle Eastern, Asian, European, and Other. Indigenous African-owned firms are 85 percent of the

sample, with the remainder being ethnic minorities: 7 percent European, 3.5 percent Indian, 1.5 percent Middle Eastern, 1.2 percent Asian, and the residual are 'other'[6].

Control variables. I employ four firm-level control variables that previous research finds related to export performance. With firm age (years since founding) and firm size (number of permanent full-time employees), I capture firm characteristics that predict export intensity (Bonaccorsi, 1992). Larger firms have better resource endowments that support export activity (Wagner, 2001). The evidence reflects a positive relationship between a firm's age and export activity. Hence, I anticipate finding a higher export intensity among older firms (Ganotakis & Love, 2012). In addition, the export intensity is generally greater among firms with significant foreign ownership (Cerrato & Piva, 2012), therefore I have included a control for percent of foreign ownership. International experience typically strengthens firms' export performance (Takeuchi, Tesluk, Yun, & Lepak, 2005). Therefore, I control accumulated learning/knowledge acquired by firms in the years since first exporting. Furthermore, I expect export intensity to be greater in jurisdictions where exports constitute a high percentage of GDP; accordingly I control for this variable (Cumming et al., 2014). I further control for year and industry fixed effects.

3.9.METHODOLOGY & RESULTS

3.9.1.Methodology

To test for hypothesis 1, I estimate Model 1 with firms' export intensity regressed on BGA and control variables (see Table 3-3). In Model 2 of Table 3-3, I test hypothesis 1 in a multi-level framework. International business scholars recommend multilevel analysis of data with a nested structure, due to interdependence among observations (Arregle et al., 2006). Multilevel Modelling (MLM) is an extension of the multiple regression model that includes nested random coefficients (Estrin, Nielsen, & Nielsen, 2017). My dataset contains variables at two levels; firm (firm size, age, GAF, foreign ownership,

[6] I excluded the firms in which their owners were specified as others since I am unable to the ethnic identity of the owner.

international experience, and export intensity) and country (exports _GDP). Consequently, I run Model 3 in a multi-level framework to test hypothesis 2 and 3, to examine how ethnic identity moderates the relationship between BG affiliation and firms' export intensity. I estimate the following two equations include:

[1] Export intensity = α_1 + β_1 Firm size + β_2 Firmage + β_3 Foreign ownership + β_4 International experience + β_5 Export_GDP + β_6 BGA + industry and time controls + ε_1

[2] Export intensity = α_2 + β_{10} Firm size + β_{11} Firmage + β_{12} Foreign ownership + β_{13} International experience + β_{14} Export_GDP + β_{15} BGA + β_{16} African + β_{17} Indian + β_{18} Middle Eastern+ β_{19} Asian + β_{20} European + β_{21}BGA * African +/- β_{22}BGA * Indian +/- β_{23}BGA * Middle Eastern+/- β_{24}BGA * European + β_{25}BGA * Asian + industry and time controls + ε_2

Where α is the constant, β is the coefficient vector, and ε is the error term. To test equation 1 that proposed hypothesis 1, I conduct an Ordinary Least Squares independently and MLM, that analyses the impact of a BGA on its export intensity. To assess the possible effect of my moderator on firm export intensity (equation 2, hypothesis 2, and 3), I conducted an MLM analysis. My hypotheses are tested as follows: hypothesis 1 implies $\beta_6 > 0$; hypothesis 2 β_{22}, β_{23} and $\beta_{24\ either}$ larger than 0 or less than 0, and hypothesis 3 $\beta_{25} > 0$.

3.10. RESULTS

We report all variable definitions in Table 3-1, as well as the sources of all of the variables used in my regressions. I present the descriptive statistics in Table 3-2, which contains the means, standard deviations, and the correlation coefficients, with export intensity at the top and exports as a percentage of GDP at the bottom. There are some possible issues of collinearity in the correlation matrix; international experience is quite closely correlated (above 0.5) with export intensity, and firm size is highly correlated (above 0.2) with BGA and ethnic identity. Regarding multicollinearity, I find that the variance inflation factor (VIF) is less than three for all variables, suggesting no concerns about multicollinearity (see Table 3-2).

To test my hypotheses, I estimate the two equations presented above. I test my hypotheses as follows: hypothesis 1 implies $\beta_6 > 0$; hypothesis 2 β_{22}, β_{23} and β_{24} either larger than 0 or less than 0 and hypothesis 3 $\beta_{25} > 0$. I report the results of the export intensity equation in Table 3-3. Commencing with hypothesis 1, the sign of β_6 in Model 1 is negative and significant, while the group competitiveness principle predicts a positive sign, therefore, the results in Table 3-3 provides no support for hypothesis 1. The coefficient of hypothesis 1 (β_6) in Model 2 (MLM) is still negative but weakly significant, as noted above, likely reflecting the hierarchical nature of the data. Therefore, neither model 1 or 2 provides support for the hypothesis that BG affiliation will increase the export intensity of affiliates more than stand-alone firms.

The remaining hypotheses are tested on the impact of the interaction of BGA and ethnic identity on the export intensity equation (2) reported in Table 3-3. hypothesis 2 predicts that the positive relationship between BG affiliation and export intensity will show no difference from African affiliate BGs when moderated by minority ethnic groups (European, Indian, and Middle Eastern) embedded in African society. I find that the signs on the coefficients β_{22} (Indian) and β_{23} (Middle Eastern) in equation (2) are positive and the sign on β_{24} (European) is negative, and none of the coefficients are significant, therefore providing support for hypothesis two that minority ethnic groups will show no performance difference compared from indigenous African owned firms. The results provide support for my null hypothesis two.

The test for hypothesis three rests on the sign and significance of $\beta_{25.}$ The results in Table 3-3 provide very strong support for this hypothesis; in Model 3, the coefficient on the interaction between Asian ethnicity and BG affiliation (Asian BG) is positive and significant. Figure 3-2 shows the interaction relationship, where Chinese group affiliations show higher export intensity than other ethnic group affiliations, while indigenous and European group affiliations have a lower level of export intensity than independent firms.

In terms of the control variables, my results are generally consistent with my expectations. Export intensity is higher in firms with higher levels of foreign ownership and longer international experience. However, larger, and younger firms have a lower propensity to export which is different from my expectations. Since the majority of firms in Sub-Saharan Africa are small, therefore, I could expect to see more international small firms (small exporting firms) than larger firms. Finally, the relationship between firm age and export intensity is not significant; the negative relationship may indicate that younger firms in Sub-Saharan Africa pursue international markets to enhance their market shares in order to remedy the market power of larger firms in the domestic market.

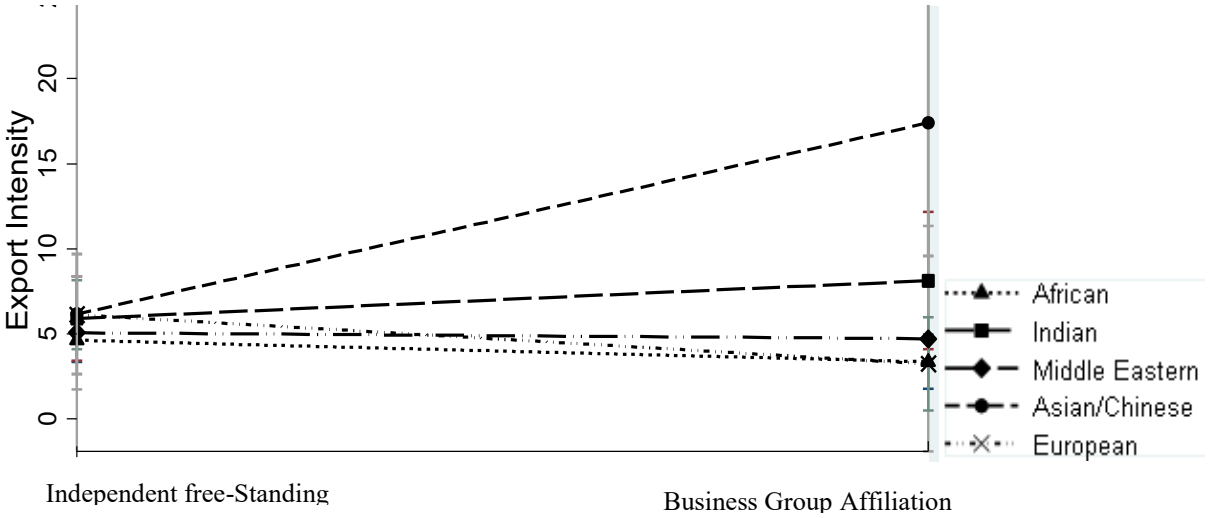

Figure 3-2.Business group affiliation and ethnic identity

Table 3-2. Means, correlation & collinearity statistics

Means & SD			Correlation								Collinearity statistics	
Variables	Mean	SD	Export	BG	Ethnicity	Size	Age	For_ Own	Int. Exper	GDP/Expo	Tolerance	VIF
Export	6.980	19.492	1								0.7038	1.42
BG	0.149	0.356	-0.0272*	1							0.9224	1.08
Ethnicity	1.401	1.111	-0.0376***	0.109***	1						0.8906	1.12
Size (Log)	2.666	1.191	0.00213	0.261***	0.226***	1					0.8142	1.23
Age (Log)	2.433	0.675	0.132***	0.0771***	0.115***	0.257***	1				0.8504	1.18
Foreign own	2.970	14.052	-0.0166	-0.0284**	0.187***	0.141***	-0.0183	1			0.9312	1.07
Int. exper.	1.922	5.140	0.532***	0.0484***	0.0602***	0.170***	0.313***	0.00822	1		0.6443	1.55
GDP/Expo.	29.209	13.488	-0.0802***	0.00420	0.161***	-0.0443***	-0.0713***	0.139***	-0.0601***	1	0.9445	1.06

*** p < 0.05, ** p < 0.01, *** p < 0.001**

Table 3-3.Effect of BGA and interaction effect of BGA & ethnic identity

Export Intensity as Dependent Variable			
	Hypothesis 1		Hypotheses 2&3
Variable	Model 1 (OLS)	Model 2 (MLM)	Model 3 (MLM)
Size (Log)	-0.820***	-0.611***	-0.672***
	(-4.90)	(-3.66)	(-3.97)
Age (Log)	-0.543*	-0.193	-0.243
	(-1.93)	(-0.69)	(-0.87)
Foreign ownership	-0.007	0.020	0.019
	(-0.35)	(0.92)	(0.89)
Int. experience	2.015***	1.903***	1.906***
	(54.77)	(51.72)	(51.76)
GDP/Export	-0.094***	-0.016	-0.021
	(-6.36)	(-0.45)	(-0.59)
BGA	-1.450***	-1.092**	-1.275**
	(-2.87)	(-2.17)	(-2.27)
African			-
			(-)
Indian			1.266
			(1.13)
Middle Eastern			0.433
			(0.27)
Asian			1.531
			(0.89)
European			1.494*
			(1.71)
BG # African			-
			(-)
BG # Indian			3.501
			(1.55)
BG # Middle Eastern			0.921
			(0.25)
BG # Asian			12.508***
			(2.93)
BG # European			-1.622
			(-1.10)
Constant	10.445***	3.064	2.829
	(4.13)	(0.93)	(0.86)
Industry control	Yes	Yes	Yes
Year control	Yes	Yes	Yes
Observations	8672	8672	8672
Adjusted R^2	0.338		
Chi2/F	109.07	3276.02	3304.29
Log-likelihood		-36127.56	-36117.34

*** p < 0.05, ** p < 0.01, *** p < 0.001**

3.11. ENDOGENEITY: SELF-SELECTION & THE GROUP AFFILIATION PERFORMANCE RELATIONSHIP

The empirical literature on the BG affiliation-performance relationship assumes that member firms gain access to group resource endowments, which will enhance the affiliate's performance, but this relationship may be subject to reverse causality. In particular, BGs may select for affiliation firms that already possess valuable resources. Several authors have drawn attention to the possibility that BGs select better quality firms as affiliates. For example, Kali (1999) suggests BGs function as a self- selection device for honest firms suggesting that BGs will absorb honest firms, increasing the density of dishonest firms involved in anonymous markets exchange. Yiu and her colleagues (2005) argue that the BGs are in a controlling position in strategically selecting its member firms, and they suggest BGs acquisition strategies will have a positive effect on group performance. As Khanna, and Yafeh (2007, p.337) put it, "comparisons of group versus non-group firms are plagued with selection issues."

We expect that among Africa's ethnic business communities, entrepreneurs will have prior information about the firm's quality. For instance, entrepreneurs may know a firm's financial status and creditworthiness. Fisman (2003) finds that preferential access of network members to supplier credit in African countries arises not from network enforcement attributes, but may arise from a firm's capabilities assessment in the form of observable differences in firm and owner quality. Despite this awareness of the potential endogeneity problem, the endogeneity of the affiliate – performance relationship is rarely tested empirically, due in part to data limitations about observable firm quality. The selection issue may arise in my study; a bias arises due to the endogeneity of the GAF variable in testing my hypotheses. However, WBES contains firm-level data on two indicators of firm quality: 1) firm access to credit, and 2) the quality of a firm's management practices (see Table 3-1).

The scarcity of capital and underdeveloped financial institutions pose difficulties for firms seeking external financing since creditors receive very little protection, and transaction costs will be a significant barrier to external financing. Accordingly, firms that have been able to generate their own capital or attract external credit on their own merits will be more attractive to business groups. Similarly, good management practices, often supplied by consultants, auditors, IT providers, and markets for high-quality human capital, are abundant in mature economies but will be comparatively rare in emerging markets. Firms that possess these practices will also be attractive candidates for group affiliation. Hence, both the ability to attract external credit and the quality of management practices can enhance firm performance and the probability of selection by BGs to join a group.

To account for this issue, I estimate a selection and an export intensity equation jointly using two-stage least squares (2SLS). In the first stage, I consider firm-specific characteristics about a firm's credit access and the quality of the firm's management practices to test for BG selection effects. Secondly, I retest my export intensity in the second stage, where the coefficient on GAF represents the impact of BG affiliation on exporting by taking into account that better firm quality-specific characteristics are selected for BG affiliates and that these factors simultaneously influence export intensity.

Relatedly, so long as factor market imperfection persists, BGs could preserve their selection advantage, and the incentives for independent firms to join a BG will remain. Contrarily, the construction of market-supporting institutions and the willingness of firms to engage in arms-length transactions will diminish the competitiveness of BGs (Khanna & Yafeh, 2007). Building market supporting institutions provides firms with a greater possibility of attracting credit and gaining access to consultants, auditors, and ICT providers who can provide independent firms with systems and advice about best management practice. With improved

institutions, management practices, and external credit in factor markets become more readily available so that independent firms can more easily identify and acquire capabilities. Hence, with improvements in factor markets, the resource differences between BGAs and independent firms will decline as independent firms enjoy better access to resources. In the new circumstances, the BG selection advantage will depreciate. I use the WBES to define management practices and financial access (see Table 3-1). The development of market-supporting institutions on BG affiliation is measured by Distance to Frontier (DTF) score, derived from the Doing Business Report of the World Bank. DTF score refers to the gap between the country's performance and the best practices across the entire sample of 41 indicators over ten factors, reflecting the needs of the business at various stages of their life cycle. We, therefore, estimate jointly the equation below (equation [3]) and equations 1 and 2:

[3] BGA = α_1 + α_1 Firm_size + α_2 Firm_age + α_3 Domestic ownership + α_4GDP_PCC + α_5 Management Practice + α_6 Financial Access – α_7 DBR_ (DTF) + industry and time controls + ε_1

We use the logit method (Angrist, 2001) to estimate the equation determining BG affiliation (equation [3]) since the dependent variable is a dummy. The results in the first panel of Table 3-4 show that the coefficients on management practices and financial access in Model 2 are both positive, but only management practices significantly impact BGA. These findings are consistent with reports that markets of external credit are improving in Sub-Saharan Africa, suggesting that BG affiliation no longer provides privileged access to credit.

Further, Model 2, demonstrates the impact of better market-supporting institutions, DTF, on the probability of group affiliation. The coefficient on the DTF variable is negative and statistically significant, showing that BG affiliation will decline as institutional quality improves. Since DTF varies only across countries, I employ MLM to address biases arising from the

hierarchy of country-level data. The results of MLM in Model 3 show the consistency with the previous Models in the first panel. High-Quality management practices will increase the likelihood of BG affiliation, while the likelihood is lower in countries with a higher quality of market-supporting institutions.

We go on to estimate the equation [3] and [1] jointly using two-stage least squares, to take into account the fact that GAF in the export intensity equation is endogenous, determined by the factors in equation [3] (management practices, financial access, and market-supporting institutional quality). The results of Model 4 in Table 3-4 provides no support for the first hypothesis, confirming the finding from Table 3-3. I run another 2SLS to estimate the equations [3] and [2] jointly for checking the robustness of the results associated with second and third hypotheses. Model 6 in Table 4 reports the results, which also confirms my support for the second hypotheses, as shown in my previous tests (see Table 3-3). To address the hierarchy issue of country-level data, I run MLM for Models 4 and 6, which Models 5 and 7, respectively, report the results. Similarly, the results support the second hypothesis, except where model 7 shows European BG Affiliates significantly underperform. Model 6 & 7 in panel B, Table 3-4, also confirm my support for China's exceptionalism, hypothesis 3, that Asian group affiliates outperform other groups.

Table 3-4.Robustness 2SLS Test. The issue of endogeneity

	Panel A: BGA as dependent variable			Panel B: export intensity as dependent variable			
Variable	(1) Logit	(2) Logit	(3) MLM	(4) 2SLS	(5) (2SLS&MLM)	(6) (2SLS)	(7) (2SLS&MLM)
Mang. Practice	0.178***	0.159***	0.089***				
Financial access	-0.000	0.028	-0.002				
DBR_ (DTF)		-0.027***	-0.034**				
GDP_PCC	0.000***	0.000***	0.000***				
Domestic own.	0.021***	0.022***	0.025***				
Size (Log)	0.549***	0.556***	0.584***	-0.626***	-0.252	-0.685***	-0.391
Age (Log)	0.005	0.000	0.058	-0.529*	-0.150	-0.578**	-0.177
Foreign ownership				-0.012	0.003	-0.010	0.010
Int. experience				2.016***	1.907***	2.018***	1.909***
GDP/Export				-0.095***	-0.015	-0.100***	-0.012
BGA				-3.825***	-5.785**	-3.854**	-4.492*
African						-	-
Indian						1.492	1.230
Middle Eastern						-0.052	-1.460
Asian						1.805	0.321
European						0.749	2.560**
BG # African						-	-
BG # Indian						2.788	3.393
BG #Middle Eastern						-0.932	13.825
BG # Asian						13.499***	18.60**
BG # European						-1.206	-6.60*
Constant	-6.593***	-5.464***	-5.117***	10.197***	5.757**	10.041***	(-1.74) 2.460
Industry control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8531	8531	8531	8531	8531	8531	8531
Pseudo R^2	0.126	0.131					
Chi2	915.60	950.77	550.26				
Chi2/F				4492.36	3479.84	4525.86	3302.98
Log likelihood	-3181.72	-3164.13	-3086.14	-39454.756	-36140.62	-39443.66	-36130.38

*** p < 0.05, ** p < 0.01, *** p < 0.001**

3.12.DISCUSSION

With this paper, I seek to make two contributions to the BG and internationalization literature. First, I add to my understandings of the origin of BG heterogeneity and some of the potential sources and limits on their competitiveness. My study finds evidence of heterogenous BG affiliate performance, as indicated by firms' export intensity. Taking all of the different ethnic ownership groups together, I find that BG affiliates, across all estimates, significantly underperform independent firms. I also find that this negative effect also holds, even allowing for the positive selection effects of affiliates possessing superior management practices. However, when I decompose BG affiliates' export intensity by ethnic ownership, I find more variable effects.

Contrary to previous research on ethnic minority networks and business groups, firms owned by Indian, Middle Eastern, and European entrepreneurs show no significant difference from indigenous African owned firms. This finding is subject to several interpretations, which I consider below. Third, I find strong support for my Chinese BG exceptionalism hypothesis. Chinese owners of group affiliated firms significantly outperform both independent firms and other BG affiliates with non-Chinese owners. Moreover, my selection equation accentuates the strength of this relationship.

Thus, I theorize that while ethnic identity may provide a basis for trust and contract enforcement, it does not appear to provide competitiveness concerning export performance. Possibly, due to limitations of the group competitiveness principle, namely that exclusion limits the range of transaction partners,or brings about competitive stagnation and the failure to locate innovations beyond the group. While my findings are consistent with this argument, my data do not allow us to shed further light on the phenomena, and more fine-grained research is needed to ascertain the relevant sources of underperformance. On the other hand, I have the relatively

recent appearance of Chinese owned BG affiliates, who have seemingly developed a recipe for successful exporting. Whether independent Chinese-owned firms in Africa can find a way of matching the BG recipe, as suggested by some observers (Sun, 2017), remains to be seen. Further research is warranted on whether a substantial population of independent Chinese firms can become a vigorous external source of entrepreneurship in the region, replicating the success they have attained in China.

The ethnic foundations of BG affiliation and its effects on internationalization is not central in mainstream BG studies. In their literature review, Holmes and his colleagues (2018) find that just four countries (Japan, Korea, Taiwan, and India) dominate the BG internationalization literature. Solidarity in the latter three countries is often based on kinship, while Japan's BGs organize around regional banks. Moreover, Japan, Korea, and Taiwan are relatively homogenous in terms of ethnic groups (Evans, 1995); therefore, ethnicity is unlikely to form the basis of solidarity. However, ethnicity forms the foundation for BG solidarity in a variety of regions, including Southeast Asia, Latin America and the Caribbean, and Central Asia. Thus, I suggest that, in addition to family-based solidarity, research on these types of BGs deserves scholarly attention.

Secondly, my findings in the endogeneity equation, that BG affiliation is negatively related to improvements in the 'ease of doing business,' provides support for the missing institutions perspective (Khanna & Palepu, 2010). This perspective suggests that once stronger market supporting institutions are in place, business groups will lose their competitiveness, and "the dismantling of business groups will follow naturally" (Khanna & Palepu, 1999, p.126). While I cannot say whether or not business groups are dismantling, I have found, for the most part, that they appear to have no competitiveness over independent firms, at least not in terms of export intensity. Other research finds that ethnic diversity explains the existence of poor state

policies and that poor policies harm economic growth and development. This can occur because policies generated by polarized ethnic groups encourage competitive rent-seeking and an unwillingness to cooperate on the creation of common-pool goods, such as good schools and infrastructure (Easterly & Levine, 1997; Alesina & Ferrara, 2005). In particular, I emphasize the potentially adverse economic effects of BGs, when social capital rests on mechanical forms of solidarity. As Fafchamps (2004, p.305) puts it "finding ways of ensuring non-discriminatory markets is thus essential for sustained market-based economic development."

Ironically, the finding that BGs, except for Chinese group affiliates, have no international advantage is consistent with the argument about a shift from mechanical solidarity toward more generalized organic solidarity, consistent with market construction (Yenkey, 2015) and greater cross-ethnic integration (Abascal & Baldassrari, 2015). Scholars of ethnic identity believe that African ethnicity is a product of the colonial era where ruling elites encouraged socioeconomic and political competition along ethnic lines. However, there is also an emerging consensus that ethnic identities are the subject of ongoing renegotiation (Lynch, 2018). Such a renegotiation is stimulated by Africa's rapid urbanization over the past two decades. Urbanization is sometimes associated with the intensification of ethnic difference, but urbanization also leads to opportunities for integration, new understandings, and emerging amalgamation of new identities. Following Yenkey's (2015, 2018) ground-breaking research on market construction in Africa, I call for research on missing institutions that integrate a concern for organic solidarity and the conditions for inclusive markets.

3.13.CONCLUSION

Business groups can serve as an organizing mechanism for navigating Africa's pervasive institutional voids (George et al., 2016). While extensive literature suggests that ethnic

ownership forms the basis of group solidarity in Sub-Saharan Africa, I find that group affiliation heterogeneously affects their international competitiveness. I find affiliates owned by Indian, Middle Eastern, and European entrepreneurs show no significant difference from indigenous African owned firms, in terms of their international competitiveness. I offer competing explanations for the absence of expected competitiveness, one suggesting that long-standing ethnic groups have stagnated and become less innovative. The other suggests that the African context is changing, and ethnic identity is no longer the basis for within-group trust. A limitation with my data is that I cannot distinguish between the two explanations, and certainly further research on these questions is warranted. In particular, my second explanation points to the possible emergence of organic solidarity and a hopeful trajectory of inclusive market construction. In contrast, I find that Chinese owners of group affiliated firms significantly outperform both independent firms and other BG affiliates with non-Chinese owners. I suggest that the appearance and evident competitiveness of these groups is a product of political and economic developments beyond Africa. Whether or not the continuing rise of China and the internationalization of firms from China will have comparable effects in other regions, such as Latin America and Central Asia, also appears to be a fruitful avenue for future research for international business scholars.

CHAPTER 4

4. RELATIONSHIP BETWEEN A FIRM'S CONTRIBUTION TO PUBLIC GOODS AND CORRUPT BEHAVIOR: EVIDENCE FROM AFRICA

4.1.ABSTRACT

Firms in the least- developed economies (LDEs) frequently adopt various non-market strategies to access critical state resources, such as infrastructure. In order to enhance my understanding of how firms under constant resource constraints influence the government to get access to the resources they need, I examine two non-market strategies in an integrative manner: contributing to public goods and engaging in corruption, both in the context of Sub-Saharan African firms. Based on my analysis of the data from World Bank's Enterprise Survey comprising 3,243 firms in 19 Sub-Saharan African countries, I find that a firm's engagement in corruption is positively associated with the firm's contributing to public goods, unlike the case in which firms contributing to public goods do not usually participate in corrupt behaviors in developed economies. I further find that such a positive relationship between a firm's contributing to public goods and corrupt behavior is reduced when it is affiliated with a business group. My results underscore that accessing resources is a firm's primary objective in using non-market strategies. Therefore, the research on non-market strategies in least-developed economies needs to incorporate different theoretical rationales from the ones in the literature with the consideration of the unique contexts in which firms operate.

Keywords*: Non-market strategies, Least developed economies, Business group affiliation, Sub-Saharan Africa*

4.2.INTRODUCTION

In the least developed economies (LDEs), firms' access to critical resources tends to be heavily constrained by the power of external stakeholders, particularly the government (Shirodkar, Beddewela, &Richter, 2018; Malatesta, & Smith, 2011). Therefore, managing non-market environments is often more critical for business success than managing market environments (e.g., Hillman, & Hitt, 1999; Peng, 2003; Marquis, & Qian, 2014). LDEs thus provide an intriguing empirical context that calls for more studies on non-market strategies. However, the current literature on non-market strategies have mostly focused on developed or emerging economy contexts and have largely overlooked the LDEs (See Marquis, & Raynard, 2015 for review), an environment in which resource constraints are the crucial challenge for firms.

In particular, scholars have recognized outright corrupt behaviors (e.g., bribery) and contributing to public goods as considerable non-market strategies to get connected to government officials who can provide needed resources (e.g. Rodriguez, Siegel, Hillman, & Eden, 2006; Ahuja, & Yayavaram, 2011; Doh, Lawton, & Rajwani, 2011; Marquis, & Raynard, 2015; Dorobantu, Kaul, & Zelner, 2017). While various aspects of such non-market strategies have been discussed, a consensus underlying the literature is the following: engaging in corruption such as bribery is illegal, illegitimate and morally improper (Martin, Cullen, Johnson, & Parboteeah, 2007), while a private firm contributing to public goods is an act of corporate citizenship to resolve various social challenges with the collaboration of governments (Scherer, & Palazzo, 2007). Since the two activities are conceptualized based on such different groundings, it has been largely understood that firms conducting bribery and those contributing to public goods are different. However, in the context of LDEs in which firms suffer from constant resource constraints, participating in bribery or contributing to public goods may not be about being

legitimate vs. illegitimate; morally proper or not; nor are they about being a corporate citizen or being responsible for society. These actions could be more about accessing resources for survival. Given such a unique context, the existing perspectives on non-market strategies in the literature can provide only a limited understanding of the strategies deployed in LDEs.

The objective of this study is to enhance my understanding of the non-market strategies used by firms in LDEs with particular attention to the relationship between a firm's corrupt behaviors and contributing to public goods. Investigating this relationship is important in that the current understanding of these two activities is heavily based on the knowledge developed in emerging or developed economy contexts. Focusing on the LDEs' unique situation, characterized by constant resource constraints, I argue that firms in LDEs do engage in corruption (e.g., paying bribes), *as well as* contribute to public goods, insofar as both of these activities enable firms to build relationships with government officials and thus help them to obtain more resources from the government. More specifically, I expect a complementary relationship (as opposed to a substituting relationship) between the two activities, which predicts that firms contributing to public goods are more likely to engage in bribery. A complementary relationship is expected since the developed relationship with government officials by participating in public projects may increase the chance of accessing more and diverse resources through bribery. Such a heightened chance of accessing needed resources may allow firms to compensate the costs of approaching the government.

Furthermore, given that the business group (BG) an affiliate (i.e., a firm) belongs to can remedy the resource scarcity facing the firm by pooling and distributing the resources that the group possesses (Yiu, Bruton, & Lu, 2005), I expect that the aforementioned positive relationship between a firm's contributing to public goods and corrupt behavior is reduced; the BG can provide its affiliated firms with the resources they need, thus the affiliate firms do not have to

engage in corrupt behaviors to a level that non-affiliated firms do, in order to acquire the resources from the government.

We develop a set of hypotheses based on this argument and test them using the data from the World Bank's Enterprise Survey, comprising 3,243 firms in 19 Sub-Saharan African (SSA) countries. My results support all of the proposed hypotheses, thereby suggesting that in SSA contexts, firms contributing to public goods may also engage in corruption, and this tendency is significantly affected by their resource accessibility, that is influenced by their BG-affiliation. My study makes important contributions to the current understanding of non-market strategies by demonstrating that the existing polarization of the two non-market strategies – contributing to public goods and engaging in corrupt behaviors - in terms of legitimacy, legality or morality, may be less relevant in the LDEs context. Instead, this study provides an alternative perspective to see these non-market strategies as a firm's efforts to tackle the constant resource scarcity that it faces. Further, this study also highlights the role of the business group substituting for the government in providing resources.

The paper is organized as follows: I begin by discussing the literature on non-market strategies with the focus on a firm's engagement in corruption and contributing to public goods. I then develop my hypotheses with specific reference to the context of LDEs. Next, I discuss the data and methodology, followed by results. I conclude with a discussion of the contributions to the literature as well as managerial and policy implications.

4.3. LITERATURE REVIEW

As business environments that firms operate to become increasingly more diverse and dynamic, the need for understanding how a firm can manage non-market environments has substantially increased (Baron, 1995). Non-market environments constitute political, social, and

cultural environments in a given country, which pose a different set of opportunities and challenges for firms (Wright, Filatotchev, Hoskisson, & Peng, 2005; Mellahi, Frynas, Sun, & Siegel, 2016). Among other factors, in an environment in which economic and institutional conditions have been less developed, scholars agree that the government is a powerful actor, controlling the distribution of resources. In such an environment, the effective management of key factor resources for production, as well as the easy access to natural resources, tend to be a critical determinant of a firm's market performance and long-term viability (Marquis, & Raynard, 2015). Particularly in the context of LDEs, firms suffer from the absence of specialized intermediaries and regulatory systems, stifling bureaucracy, poorly developed capital markets, and frequent government intervention in their market activities. Therefore, the effective management of government relations becomes even more critical in LDEs for firms to gain access to critical resources held by the government and enhance their current and future performance (Hillman, & Hitt, 1999; Marquis, & Raynard, 2015). Building good relationships with the government is a crucial part of non-market strategies in LDEs.

In building relationships with the government, two non-market strategies have been discussed prominently as being pertinent to less developed country contexts: one is the engagement in corruption, and the other is the contribution to public goods with the collaboration of government agencies. The literature on corruption has highlighted bribery, or informal payments to government officials, as a prevalent non-market strategy of firms exercised in LDEs or emerging economies (Rodriguez et al., 2006). Bribery is defined as ‘‘the offering, promising, or giving something in order to influence a public official in the execution of his/her official duties (OECD Observer, 2000).”

Since states in LDEs tend to suffer from low budgets and resource constraints, the number of government officials is not sufficient to efficiently undertake administrative tasks, and the

level of their wages tend to be low. Responding to such conditions, government officials are likely to be corrupt and often demand bribery payments from firms (Acemoglu, & Verdier, 2000). Due to a lack of economic and institutional infrastructure, firms in this context usually have to provide bribes to government officials, as requested, in order to obtain the minimum benefits necessary to ensure their survival (Faccio, 2006; Mbaku, 1996; 2010). Bribery may also work as a short-cut to overcoming a firm's inability to compete in a market (McArthur, & Teal, 2002), given that such payments serve as 'speed-money' to facilitate doing business (Birhanu, Gambardella, & Valentini, 2016) by allowing firms to exploit government resources (Tu, Lin, & Liu, 2013).

As an alternative way to bribery of getting connected to the government, scholars have suggested a firm's engagement in public projects and contributing to public goods (Lin et al., 2015; Lawton et al., 2013). From the perspective of political CSR (Scherer, & Palazzo, 2007), a private firm's contributing to public goods has been considered as corporate citizenship, under democracy. By engaging in public projects, firms can pursue their own political interests in legitimate ways while creating social value (Dubbink, 2004; Matten & Crane, 2005). Working on public projects provides additional benefits to firms such as the opportunity to build a relationship with the government. Such a relationship could enable firms to gain political legitimacy (e.g., the government's endorsement on corporate activities), as well as to access state-owned resources. Furthermore, politicians and regulators are likely to perceive the firms participating in public projects favorably, given their participation can substantially reduce the burden to the government in providing public goods (Wang, & Qian, 2011; Hond, Rehbein, Bakker, & Lankveld, 2014).

While both strategies – engaging in corruption and contributing to public goods -- have been observed as prominent non-market strategies in less developed economy contexts, these

strategies have been conceptualized based on different groundings. Regarding the former, scholars have reached a consensus that engaging in corruption is illegal and unethical; thus, it should be circumvented for fair market exchanges (Lindgreen, 2004). On the other hand, the latter has been discussed largely from the CSR framework and thus has been conceived of as something that firms pursue out of their social responsibility to contribute to social value creation (or to avoid the destruction of social value) as a corporate citizen (Sison, 2009). These different conjectures underlying the two non-market strategies suggest that firms contributing to public goods tend not to engage in corruption, given that these behaviors are engraved in different value propositions. Some scholars indeed argue that CSR practices could be a primary driver in reducing corruption (Lawton, McGuire, & Rajwani, 2013) since the social consciousness deriving from contribution to public goods can alleviate firms' corrupt behaviors (Luo, 2006). Also, contribution by private firms to public goods promulgates anti-corruption norms, thereby thwarting corrupt behaviors (Rodriguez et al., 2006).

The LDEs context, however, challenges such prevalent perspectives, polarizing the two non-market strategies. In a relatively more developed economy context, for instance, firms that are willing to contribute to enhancing public goods tend to do so to create social value, and these firms tend to stand against corruption. However, in the context of LDEs, firms suffer from severe resource constraints; thus, underlying motivations for contributing to public goods could differ from seeking social value creation (e.g. Jamali, & Mirshak, 2007; Dobers, & Halme, 2009; Robertson, 2009; Benon-be-isan Nyuur, Ofori, & Debrah, 2014). For instance, in economies such as those in Sub-Saharan African countries, firms may decide to engage in local capacity building (e.g., training, health programs, transportation plans, etc.) in order to address the lack of public infrastructure required for their own operations and survival (Helmsing, 2003; Farlam, 2005). Such an observation leads us to look to the possibility that the relationship between firms'

contributing to public goods and engaging in corruption could also differ from the conventional understanding.

4.4.THEORY DEVELOPMENT AND HYPOTHESES

4.4.1. Complementary Non-market Strategies

Firms, particularly in the context of LDEs, confront shortfalls in resources which prevent them from achieving higher performance relative to their goals (Zoogah, Peng, & Woldu, 2015). In this context, important resources for firm operation are largely state-owned; thus, firms tend to strive to build cooperative relationships with government officials. While various ways to build such relationships are available, there are two prominent ways to do so: contributing to public goods with the collaboration of governments and/or engaging in outright corruption (Cuervo-Cazurra, 2016; Scherer, & Palazzo, 2011). Firms may contribute various resources of their own, such as land and space, labor, funds, various office supplies, and computer equipment to public projects (McWilliams, & Siegel, 2001). The firms that have built strong relationships with the government by participating in public projects will be able to leverage the relational capital, which will help them gain more advantage in resource allocation through bribery. I therefore expect that a firm's contributions to public goods will lead to its increased involvement in bribery. I discuss the reasons for this expectation more specifically below.

First, contributing to public goods allows firms to approach the government more easily and learn about the government (e.g., how government officials work and make decisions). By working closely with the government, firms may have more chances to bond with the government and to create a stronger capability to properly interact with government officials (Cuervo-Cazurra, 2016; Lin et al., 2015; Lawton et al., 2013). However, obtaining such benefits

involves costs and takes a significant amount of a firm's resources. In an environment where the overall resources are insufficient, firms need to get compensated for the efforts that they make to contribute to public goods. This can be achieved by exploiting the reciprocal relationships that a firm may have built by participating in public projects together with the government. In other words, the government may allocate more resources to the firm that contributes to public goods with the same amount of bribes, as a gesture to reimburse the firm's expenditures in contributing to public goods (Ofori, &Hinson, 2007; Garriga, & Melé, 2004). In order to make the most of this opportunity, the firm may engage in bribery in a broad scope of operational activities, thereby resulting in a higher amount of total bribes.

Second, the more frequent the endeavors that are put forward in entering into the governmental system by contributing to public goods, the more firms become aware of the existence of the second market (informal market) of resources controlled by corrupt officials. Bribery, in this context, tends to play a critical role as a method to get access to the resources exchanged in this market (Alam, 1990). With the heightened awareness, these firms will be more tempted to engage in bribery to reach more state-owned resources to ensure an uninterrupted supply of public service (electricity to their business zone, permission to import materials, etc.) (Ufere, Perelli, Boland, & Carlsson, 2012). In the presence of rationed public goods, the knowledge about the secondary market may also enable firms to regard the market as a remedy and thereby illegally obtain more than one unit of the good, even if they have received their fair share of the rationed good (Batabyal, & Beladi, 2008). As a result, firms contributing to public goods may learn how to identify and to be approved by corrupt officials, which in turn enables firm managers to engage in a wide variety of corrupt activities for obtaining more diverse public goods/services (Venard, & Hanafi, 2008).

Finally, in corrupt-prone environments such as LDEs, managers often express the following sentiments: “Everyone I know in my industry pays bribes,” “I bribe to keep up with competitors who have a habit of bribing to get contracts,” “The majority of my politicians loot the state coffers,” “If everyone is doing it (paying bribes) to succeed, why not me?” (Ufere, Perelli, Boland, & Carlsson, 2012: 2450). However, at the same time, managers tend to have emotional inhibitions toward bribery, such as fear, shame, and anxiety. The collaborative experiences of managers with the government via contributing to public goods may psychologically prepare the managers for engaging in more corrupt activities. The firm-government bonding established from their collaboration may reduce the psychological inhibition held by managers and increase their self-justification of bribery as a mechanism to form effective relationships with government officials. Hence, managers may be more willing to face and cooperate with corrupt officials, thereby resulting in higher amounts of total bribes (Li, Yao, & Ahlstrom, 2015).

In summary, in LDEs, firms contributing to public goods will have a stronger incentive to engage in corrupt behaviors such as bribery since they can get more benefits out of these behaviors. Furthermore, these firms are likely to have the more relational and psychological capacity to interact and deal with various government officials including corrupt ones. Hence, I propose the following:

> *H1: In the context of LDEs, there will be a positive association between a firm’s contributing to the public good and the intensity of bribery that the firm engages in.*

4.4.2. Influence of Business Group Affiliation

Business groups contribute to organizational performance by creating advantages in accessing capital and other production factors for their group members (Khanna & Palepu, 2000; Bamiatzi, Cavusgil, Jabbour, & Sinkovics, 2014). Two salient features of business groups are:

their ability to facilitate the supply of resources and to forge strong political connections (Khanna & Palepu, 2000). Business groups - a prevalent form of governance in developing economies - tend to mitigate the hurdles stemming from resource constraints and institutional limitations, particularly by securing the critical resources and infrastructures for performance and survival (Carney, Gedajlovic, Heugens, Van Essen, & Van Oosterhout, 2011). In other words, business groups create a common pool of strategic resources for their affiliates to appropriate value in ways that would be difficult to accomplish through the external environment (Chang & Hong, 2000; Khanna & Palepu, 2000; Khanna, & Rivkin, 2006). Therefore, business groups can act as a substitute, for instance, for external capital markets and serve as an insurance policy (Carney et al., 2011). As business groups provide resources to their affiliated firms, the affiliated firms will depend less on the government in accessing resources needed for their operations. As a result, I expect that group affiliated firms will engage in corrupt activities to a lesser extent for the purpose of obtaining the required resources and infrastructure for operations.

Furthermore, BGs can "make implied contracts with states" that benefit their affiliates (Carney et al., 2011). As BGs invest in political connections to obtain subsidies, trade protection, tax breaks, etc. (Khanna & Yafeh, 2007), the affiliates may not have to engage in corrupt activities themselves in order to obtain state-controlled licenses or permissions to get access to resources. For instance, in Africa, dominant business groups tend to have designated civil servants who have influence over the allocation of state-owned resources in ways that wealth can be redistributed to the business group that they work with (Mbaku, 2010). Furthermore, business groups have enough resources to undertake lobbying for directing the state-owned resources towards their affiliates (Lawton et al., 2013). From the perspective of local governments, particularly in LDEs, they require reaching out to large firms or business groups to secure funding for operating public service and constructing/maintaining local infrastructure (Khanna &

Yafeh, 2007). The shortage of public funds motivates local governments to solicit contributions to public goods from local firms (Lin et al., 2015; Chen et al., 2011). Thus, the reciprocal relationships between business groups and the government are likely to provide the business group affiliates with public services and needed resources in a more timely and efficient fashion and thus will reduce the need for the affiliates to engage in corrupt activities. Based on this discussion, I propose the following:

> *H2: In the context of LDEs, business group affiliation will negatively moderate the relationship between contributing to public goods and bribery. More specifically, the positive relationship between contributing to public goods and bribery will be less pronounced in firms affiliated with BGs (vs. non-affiliated firms).*

Figure 4-1 illustrates the moderating effect of business group affiliation on the positive relationship between a firm's contribution to public goods and its bribery intensity.

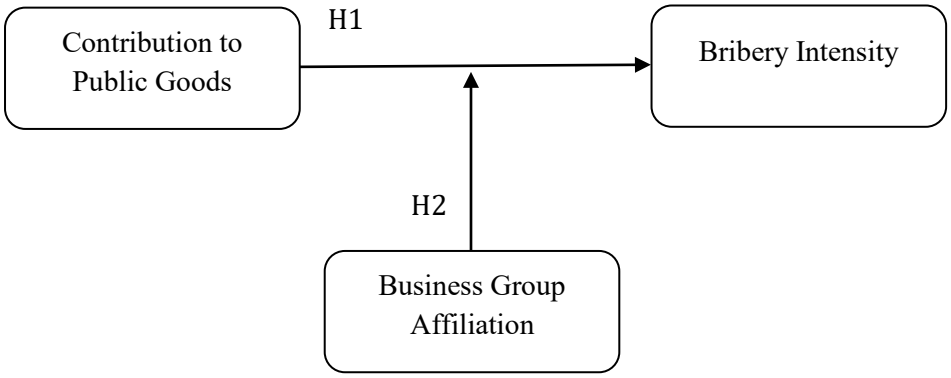

Figure 4-1.The conceptual framework of this study

4.5. METHODS

4.5.1.Data

This study focuses on Sub-Saharan African (SSA) countries. The severe resource constraints observed in SSA makes this context relevant to the current study. African firms, in general, have encountered very limited physical and commercial infrastructure, such as electrical and water connections, communication technology, transportation infrastructure, power generation, and so on. For instance, according to the Enterprise Surveys conducted in 2010 through 2017, 80 percent of SSA firms experience electrical outages, and 24 percent of those also experience water shortages; the percentages of firms is higher than those observed in any other developing economies, such as Latin America & Caribbean (61 % and 15 %) and the Middle East & North Africa (57 % and 21%)). In SSAs, bribery tends to be employed as a prevalent non-market strategy to eliminate some shortcomings in doing business. High rates of bribery incidence[7] (22.2%) and bribery depth[8] (17.1%) in SSA evidence the pervasiveness of corruption, which encourages SSA firms to use bribery as a competitive requirement, especially when there is no penalty for it (Linder & Linder, 2008). Thus, I test the hypotheses using the data provided by the World Bank's Enterprise Surveys, particularly taken in SSA countries (WBES, 2016).

WBES has been administered by the World Bank to gauge the investment climate in the world's economies and to improve the understanding of firm behavior, and WBES comprises a wide array of data from 125,000 firms located in 139 countries. For this study, I use the most recent data – the data collected in 2016, which contain 3,243 firms in 19 Sub-Saharan African countries. The WBES are administered by local staff based on their one-on-one interviews with firm representatives who are usually top managers or functional managers knowledgeable of the overall operation of the firm. The use of a local staff as survey administers suggests that the

[7] Percent of firms experiencing at least one bribe payment request
[8] Percent of public transactions where a gift or informal payment was requested

interviewer be familiar with the local language and culture. Given its rigorous approach and resulting reliability, the WBES data have been used widely in studies in economics as well as the strategic management (e.g., Harrison, Lin, & Xu, 2014; Mitton, 2016).

4.6.VARIABLES AND MEASUREMENT

***Dependent variable*:** I examine the intensity of a firms' bribery involvement by the amount of the informal payment or gift that a firm paid to government officials scaled by the firm's total sales, an approach consistent with previous studies of corruption (e.g., Fisman, & Svensson, 2007; Lee, & Weng, 2013). I use a percentage scale of bribery over total sales in order to reduce the potential size effect. This variable is based upon WBES questions asking 'on average, what estimated total annual value, do establishments like this one pay in informal payments or gifts to public officials for this purpose?' and 'Last complete fiscal year's total sales.' Specifically, the question states that establishments "make gifts or informal payments to public officials to "*get things done* with regard to customs, taxes, licenses, regulations, services, electrical connection, water connection, telephone connection, etc."

Our measurement of an African firm's informal payment amount is reliable for three reasons: first, in their comparisons of expert opinion surveys and household surveys in Sub-Saharan Africa to gauge corruption, Razafindrakoto and Roubaud (2010) have shown that experts commit more errors in assessing corruption. I measure the corruption based on surveys of firm managers rather than expert opinion[9]. Second, since managers do not tend to admit to conducting illegal activities in a survey, it is usually challenging to access accurate information especially when survey questions touch upon sensitive issues such as corruption. In order to minimize such

[9] Experts tend "to rank countries based on their own political preferences, and the existence of an erroneous implicit cultural model of "how Africa works" (for more details see Razafindrakoto & Roubaud, 2010).

issues, the survey questions ask manager to estimate how much will be the bribery intensity of firms like his own firm instead of inquiring the firm's bribery intensity directly (WBES, 2011). Finally, Clarke (2011) demonstrates that the percentage measure of a firm's bribery (i.e., the amount of bribery payments over total sales) tends to show four to fifteen times higher than its measure based on a monetary term. To avoid such an overestimation of bribery, I adopt the percentages by taking two questions about informal payment amounts and the firm's sales, instead of using the question 'Percentage of total annual sales paid as informal payment.'[10]

***Independent variable*:** In Africa, pandemics are already public health disasters and a key concern (Allen & Heald, 2004). People in this region grapple with disastrous and contagious diseases, such as HIV/AIDS, malaria, tuberculosis, and other communicable diseases. To remedy or stop these and other diseases, Kaul and Faust recommended that firm managers "should be appointed to facilitate policy partnerships (2001: 872)", in addition to the role of international cooperation in the health area, in providing public goods. Rosen and her associates (2004) argued that HIV/AIDS leads to labor costs for firms in southern Africa, which can undermine their competitiveness in the industry. They found "HIV/ AIDS among employees added 0.4–5.9% to the companies' annual salary and wage bills" (2004: 317). Bollinger and Stover demonstrated the direct and indirect cost of HIV/AIDS, including "expenditures for medical care, drugs, funeral expenses, lost time due to illness, recruitment and training costs to replace workers, and care of orphans" (1999: 3). Habyarimana, Mbakile, and Pop-Eleches, (2010) found that if firms provide treatment of HIV/AIDS to their workers, it will be economically beneficial for them. Therefore, companies have a financial incentive to invest in prevention and treatment interventions of HIV/AIDS (Rosen et al., 2004). As such, companies can voluntary contribute to supplying public goods or cooperate in government programs. In the book *The Politics of AIDS in Africa*,

[10] For more details see Clarke (2010): "How Petty is Petty Corruption? Evidence from Firm Surveys in Africa"

Patterson, and Cole (2006) examined the impact of a variety of political variables on HIV/AIDS. Companies can contribute to policies such as prevention programs, care and treatment services, evaluation, monitoring, and research, etc. In this study, I examined the amount of firm contribution to public goods by gauging firm cooperation in HIV/AIDS programs and activities. The WBES asks "how much did this establishment spend on all AIDS/HIV programs and activities?" (AFS.4 from African WEES, 2010). We, therefore, measure the ratio of a firm's public good provision over total sales.

Moderating Variable: The moderating variable in the study is BG affiliation (BGA). I construct this variable as a dummy, indicating whether a focal firm is a member of a business group. In previous research, BG-affiliation has been most commonly operationalized as a firm that is publicly listed on a National Stock Exchange and is partially owned at a common threshold by another firm (Carney et al., 2011). WBES survey data is valuable in this regard since it uses a standard definition of group affiliation across jurisdictions. WBES data also meet the group criteria found in the literature, specifically that 1) groups are formed by legally independent companies, (2) affiliated with a larger organization in a stable manner, and (3) subject to coordination and support by the larger enterprise (Tajeddin, & Carney, 2018; Castellacci, 2015a). The World Bank survey specifies that firms are independent according to the following criteria: enterprises must be (i) legally registered for tax purposes, (ii) must make their own financial decisions and have their own financial statements separate from those of the group, (iii) must have their own management and control over their payroll, and (iv) be owned by private domestic individuals, companies or organizations. Affiliated firms are self-identified as not a 'firm on its own,' but linked with a larger enterprise. Hence, affiliation is self-indicated by the firms to be legally independent but affiliated with a larger organization in a stable manner. By this definition, BG affiliation is prevalent among African businesses: 17% of privately owned

SSA firms report a group affiliation (see Table 4-1). WBES data suggest group affiliation is common in many African countries, including Ethiopia, where approximately 40% of firms indicate group affiliation, as well as in Congo (38%), South Africa (37%), and Kenya (28%).

Control Variables. I use nine control variables that prior studies found to be related to bribery. Firm size (a composite measure of permanent workers-full-time employees of this firm at the end of last fiscal year) and firm age (years since founding) are included as major firm characteristics. First, smaller firms lack the power to resist officials' demands for informal payment, and government agencies and law enforcement authorities do not pay attention to these firms (Svensson, 2003). Furthermore, small firms tend to pay a higher proportion of their revenues in bribery payments than large firms in order to secure basic requirements in their business environment (Wu, 2009).

Second, there is evidence for a relationship between a firm's age and bribery (e.g., Lee, Oh, & Eden, 2010). Older firms have longer experience regarding the level of corruption in the business environment, the size of bribery intensity and bribery propensity, etc. Therefore, I will expect the level of experience in existing corruption in a given business environment may impact the amount of bribery (Huang, & Rice, 2012).

In addition, I control for industry effects using the WBES industry categories since industry characteristics may shape the perceptions of public officials regarding the willingness of firms for paying bribes (Clarke, & Xu, 2002; Martin et al., 2007). The type of firm ownership is another control variable which can influence the firm's informal payment amounts since managers in private-owned enterprises, and state-owned enterprises have different incentives and targets, different levels of access to state resources and ability to influence the rules (Nguyen, & Van Dijk, 2012). Since state-owned firms are governed by the government directly, they may have a lower propensity to bribe officials than non- state-owned enterprises (Gao, 2011). I use a

firm's percentage of state ownership as a control variable in my model as measured in the WBES. Moreover, domestic firms are more embedded in their home countries compared to MNEs and foreign firms (Zaheer, 1995), and the higher the foreign ownership of the firm, the smaller the bribes paid by the firm to government officials (Lee, Oh, & Eden, 2010). Therefore, I distinguish between foreign and domestic ownership and controlled for a firm's percentage of private domestic ownership.

The prior studies also stressed the impact of corporate governance on corruption (Wu, 2005; Dela Rama, 2012). Ramdani and Van Witteloostuijn (2012) found that firms where the owner also acts as a manager (owner-manager), are more likely to engage in informal payments compared to their counterparts with separation of ownership and control. To control for the noted corporate governance, I used the question 'What is this firm's current legal status?' from the WBES. I also measured 'what the percentage of total sales belonging to the main activity or product represents' to control product diversity, which may influence the firm's informal payment amount. This is because informal payments may enable firms, particularly in the context of LDEs, to overcome bureaucratic obstacles, and also compensate for the lack of kinship or political affiliations in order to introduce a new product (Krammer, 2017).

We controlled for ethnic fractionalization as an indicator of social heterogeneity, that increases the probability of corruption (Mauro, 1995) since corrupt officials are being protected by their own ethnic groups for political reasons (Glaeser, & Saks, 2006; Dong, & Torgler, 2013; Forson, Baah-Ennumh, Buracom, Chen, & Peng, 2016). To control this heterogeneity, I used Ethno-Linguistic Fractionalization (ELF) to measure ethnic fractionalization, as developed by Alesina and his colleagues (2003). To control for the effects of the institutional environment and country-specific, anti-corruption policies, I use the country as a nominal variable (19 countries). Each of the variables' mean and correlation is presented in Table 4-1.

Table 4-1.Means and Correlation

	Variables	Mean	SD	N	1	2	3	4	5
1	Bribery Intensity	1.55	6.01	3243	1				
2	Public Goods	.04	.42	3243	.057**	1			
3	BGA	.17	.37	3243	-.063**	.035*	1		
4	Age	16.44	15.49	3243	-.048**	.003	.165**	1	
5	Size	2.32	.87	3243	-.056**	.013	.279**	.313**	1
6	Gov. Own.	.57	5.25	3243	.001	.021	-.020	.100**	.104**
7	Dom. Own.	93.54	20.49	3243	-.048**	-.016	.044**	-.062**	-.054**
8	Firm Type	3.19	1.01	3243	-.049**	.008	-.021	.054**	.034*
9	Business Sec.	38.85	16.80	3243	-.019	.025	.008	-.139**	-.139**
10	ELF	.64	.219	3243	.101**	.042*	-.014	-.145**	-.164**
11	Country	22.57	15.4	3243	-.107**	-.044**	.061**	.355**	.083**
12	Diversity	76.9	22.26	3243	-.042*	-.004	.007	.029	.080*

	Variables	6	7	8	9	10	11	12
1	Bribery Intensity							
2	Public Goods							
3	BGA							
4	Age							
5	Size							
6	Gov. Own.	1						
7	Dom. Own.	-.292**	1					
8	Firm Type	-.081**	.072**	1				
9	Business Sec.	-.010	.017	-.005	1			
10	ELF	-.002	-.077**	-.011	.057**	1		
11	Country	.008	.093**	.203**	-.188**	-.429**	1	
12	Diversity	-.027	.076*	.047**	-.041*	-.051**	.059**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.7. ANALYSIS

To test for hypothesis 1, Model 2 is run with firms' bribery intensity regressed on contribution to public goods and control variables. In model 4, I test hypothesis 2 in order to examine how business group affiliation moderates the relationship between contribution to public goods and firms' bribery intensity. I estimate the following four equations include:

[1] Bribery intensity = α_1 + β_1 Age + β_2 Size + β_3 Government Ownership + β_4 Domestic Ownership + β_5 Firm Type+ β_6 Sector + β_7 EFL + β_8 Country-Code + β_9 Diversity + ε_1

[2] Bribery intensity = α_2 + β_{10} Age + β_{11} Size + β_{12} Government Ownership + β_{13} Domestic Ownership + β_{14} Firm Type+ β_{15} Sector + β_{16} EFL + β_{17} Country-Code + β_{18} Diversity + β_{19} Contribution to Public Good +ε_2

[3] Bribery intensity = α_3 + β_{20} Age + β_{21} Size + β_{22} Government Ownership + β_{23} Domestic Ownership + β_{24} Firm Type+ β_{25} Sector + β_{26} EFL + β_{27} Country-Code + β_{28} Diversity + β_{29} Contribution to Public Good + β_{30} BGA + ε_3

[4] Bribery intensity = α_4 + + β_{31} Age + β_{32} Size + β_{33} Government Ownership + β_{34} Domestic Ownership + β_{35} Firm Type+ β_{36} Sector + β_{37} EFL + β_{38} Country-Code + β_{39} Diversity + β_{40} Contribution to Public Good + β_{41} BGA + β_{42} Public Good Provision * BGA + ε_4

where α is the constant, β is the coefficient vector, and ε is the error term. To test the equation 2 that proposed hypothesis 1, I conduct an OLS independently, that analyses the impact of a firm' contributing to public goods on its bribery intensity. To assess the possible effect of my moderator on firm' bribery intensity (equation 4, hypothesis 2), I conducted a moderation model by using the PROCESS syntax for SPSS by Hayes (2013). I use version 2.12 of process analysis, which can be freely added to SPSS software. This feature makes the simultaneous calculation of all links possible, solving partly the non-normality of interaction terms with the use of bootstrapping through repeated sampling with replacement. The model developed here, shown in Figure 4-2, is mirrored in Hayes's (2013) Model 1, with the independent variable being firm' contributing to public goods, the dependent variable being firms' informal payment amounts, the moderator is the dummy for group affiliation and the control variables as stated above. The Moderation model of Hayes estimates the equations in 4. I run OLS to test equations 1 and 3 so as to compare the changes in R-sq for assessing the improvement the model by adding the moderation.

4.8.RESULT

Table 4-1 shows the means (M), standard deviations (SD), and bivariate correlations of all variables. As expected, firms' informal payment amounts have significant positive correlations with firms' contributing to public goods and were negatively correlated with BGA. To test my hypotheses, I estimate the four equations presented above. Model 1 examines the direct relationships that the control variables have with firms' informal payment amounts. The firms' contribution to public goods is added in Model 2, in which I test hypothesis 1. BGA is added in Model 3 to examine its impact on informal payment amounts independently, prior to its

interaction with contributing to public goods. Finally, I add two-way interaction between contribution to public goods and BGA into Model 4 to test hypothesis 2.

The results in Table 4-2 correspond to my informal payment amount equations (1- 4). Focusing on the OLS estimations of the informal payment amount equation, I can see that contribution to public goods is significant in Model 2, having a positive effect on the informal payment amount (ß = 0.78; $p<0.05$) and leading to the conclusion that the contribution to public goods is meaningful to the informal payment amount of firms in SSA (See Table 4-2). To determine whether BGA has a moderating influence on informal payment amounts, I test a full model (model 4), taking into account the effect of contribution to public goods, BGA, two-way interaction of BGA and contribution to public goods, and the control variables on the informal payment amount (Equation [4]). The results in table 4-2 show that the interaction of contribution to public goods and BGA is negatively related to bribing amount (Model 4: ß = - 0.99; $p<0.05$). Figure 4-3 shows the interaction relationship. A simple slope test (Hayes, 2013, see Table 4-3), with all the variables included in Model 4, indicates that the relationship between contribution to public goods and informal payment amount is non-significant in affiliated firms (simple slope = 0.28, SE = 0.34, t = 0.81, p = 0.42), but positive in standalone firms (simple slope = 1.24, SE = 0.33, t = 3.81, $p < .001$). Furthermore, R-sq value (0.029) in Model 4 is higher than the other Model that shows my interaction Model is strong. Therefore, the results support hypotheses 1 and 2.

Table 4-2.Bribery Intensity and the Effect of Public Goods and Interaction Effect of Public Goods & BGA

Variables	Bribery Intensity				
	Model 1 (OLS)	Model 2(OLS)	Model 3 (OLS)	Model 4 (OLS)	Model 5(2SLS-IV)
	Coeff.	Coeff.	Coeff.	Coeff.	
Age	0.00	0.00	0.00	0.00	0.00
Size	-0.33***	-0.34***	-0.24*	-0.24*	-0.34
Gov. Own.	-0.01	-0.01	-0.01	-0.01	-.01
Dom. Own.	-0.01*	-0.01*	-0.01*	-0.01*	-.01**
Firm Type	-0.22**	-0.22**	-0.24**	-0.25**	-.22**
Business Sec.	-0.01*	-0.01**	-0.01*	-0.01*	-.01**
ELF	1.74***	1.70***	1.82***	1.82***	1.69***
Country	-0.02***	-0.02***	-0.02**	-0.02**	-.023***
Diversity	-0.01	-0.01	-0.01*	-0.01*	-.00
Public Goods		0.78***	0.80***	1.28***	2.4*
BGA			-0.84***	-.78***	
Public Goods x BGA				-.99**	
Constant	4.58***	4.61***	4.33***	4.32***	4.6***
R	.14	.15	.16	.17	.16
R-sq	.021	.025	.028	.029	.025
F	8.120***	8.37***	8.39***	8.05***	8.37***
Num.	3243	3243	3243	3243	3243

p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

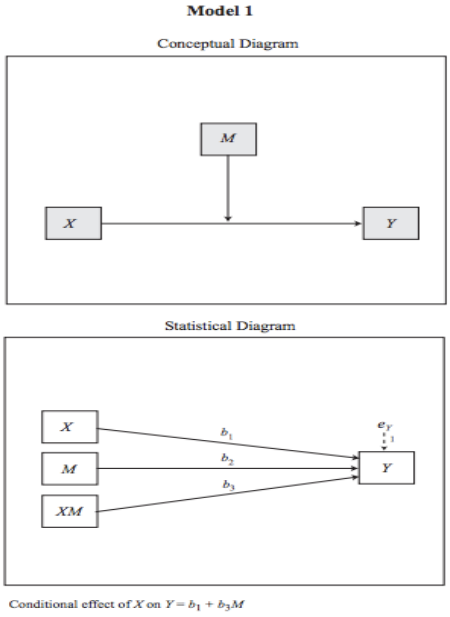

Figure 4-2.Moderating Effect, Hayes (2013)

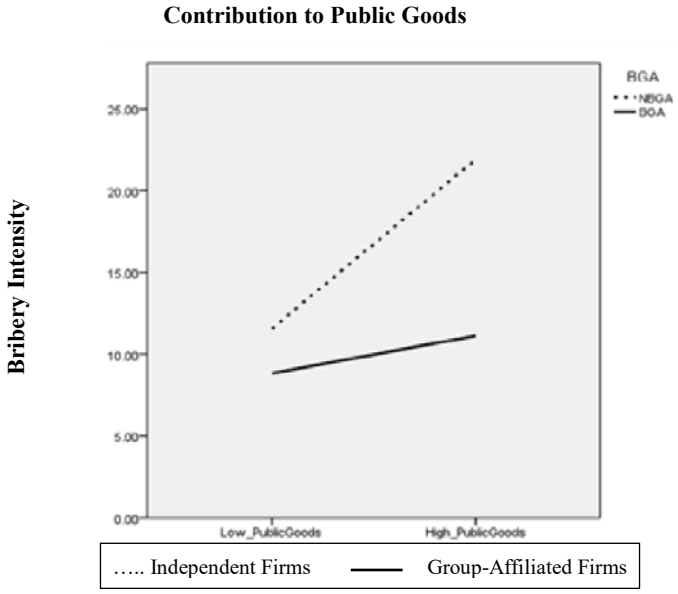

Figure 4-3.Group affiliation Firms & Public Goods interaction

Table 4-3.Conditional effects for different values of the moderators using PROCESS by Hayes (2013)

BGA	Effect	SE	T	P	LLCI	ULCI
0	1.24	.33	3.81	.0001	.726	1.83
1	.28	.34	.81	.42	-.28	.85

4.9.ROBUSTNESS CHECK: THE ISSUE OF ENDOGENEITY

The estimation of equations (1) to (4) through OLS has the limitation of not considering the endogeneity of public goods in Equation (2) to test the first hypothesis, "giving rise to biased and inconsistent estimates" (Shaver, 2005). Following Shaver (2005), the presence of unobservable effects or measurement errors will result in endogeneity concerns. More specifically, according to the assumptions of regression analysis, the independent variable of public good provision in Equation (2) should be uncorrelated with the error term (ε_2). For example, not accounting for unobservable firm-specific effects affecting informal payment amounts, would create this endogeneity, given that the error term (ε_2) would be correlated with the public good provision variable in the equation. For this possibility, the exogeneity of the public good provision as an explanatory variable is suspect. To remove bias resulting from modeling endogenous variable of public good provision with a single equation (e.g., standard ordinary least squares [OLS] models), a two-stage least squares estimation using an instrumental variables technique was employed (Morrow, Sirmon, Hitt, & Holcomb, 2007).

To be valid (i.e., not weak), the instrumental variables should not be related to the informal payment amount predicted in the second stage, but should be associated with the endogenous variable, public good provision, predicted in the first stage (Kennedy, 2003). Therefore, the use of a relevant instrument is an essential concern. I identified a health index as an instrumental variable for meeting these criteria. The health index specifies the firms' activities to prevent HIV/AIDS and provide health checks for employees. This instrumental variable was included in the first-stage models but was not included in the second-stage informal payment amount model[11]. The results of Model 5 (2SLS – IV estimates), presented in Table 4-2, confirms the positive effect of the public good provision on informal payment amounts. Furthermore,

[11] The estimation was performed using the 'ivreg 2' command in Stata

Durbin and Wu-Hausman[12] tests confirm the null hypothesis which is the exogeneity of public good provision. To assess the qualification of the instrument (health index), I use the report summary of first-stage regression that shows that the F statistic (46.78) is larger than any critical values proposed by the test. Therefore, I can reject the null hypothesis which means the health index is not a weak instrument.

4.10. DISCUSSION & CONCLUSIONS

Taking up the challenge posed by George and his colleagues (2016), I address the pressing question of how SSA firms overcome the hurdle of resource constraints. My main contribution to the literature is to document the emerging notion of an integrated approach of prominent non-market strategies, as argued by prior studies (e.g., Rodriquez et al., 2006; Marquis, & Raynard, 2015), to overcome the issue of resource constraints in Africa. I discuss non-market strategies, contributing to public goods and bribery, for SSA firms in a framework underpinned by a resource constraint approach. In this vein, I provide some answers to the question of how firms employ the non-market strategies in understudied contexts where resources and appropriate infrastructure are scarce, and firms depend on safe critical resources, particularly state-owned resources. I find that SSA firms contributing to public goods (e.g., health programs, development of human capital, etc.) are involved in more corrupt activities and pay more bribes to officials, resulting in accessing more state-owned resources.

Firms use the contribution to public goods to bond with governments, which is then rewarded by the government, including higher levels of government subsidies, lighter taxes, lower levels of government scrutiny, and long-term debt financing (Lin et al., 2015; Faccio, 2006). The noted expectancies from such a contribution indicate the political role of firms in

[12] Durbin (score) chi2(1) = 1.15508 (p = 0.2825); Wu-Hausman F(1,3231) = 1.15122 (p = 0.2834)

addition to their economic role, particularly in developed economies where deliberative democracy (see Habermas, 1996; 1998 for details) has resulted in politicizing corporations and developing concepts such as political corporate social responsibility and corporate citizenship (Scherer, & Palazzo, 2007). In SSA where firms are at the early stages of contributing to public goods and projects (Robertson, 2009) due to resource constraints and inefficiencies of institutions, firms use this contribution as an instrumental tool to pursue their favors and interests (Garriga, & Melé, 2004). Similarly, Ofori and Hinson (2007) underlined how local firms in Ghana are less moral and ethical in their approach to corporate social responsibility as compared to internationally-connected Ghanaian firms. Consequently, such firms expect to be reimbursed for their contribution to public projects by taking another non-market strategy in recompense. In SSA as a representative of the context of LDEs, relational capabilities with government officials obtained by contributing to public goods, high level of firm's dependence on state-owned resources, and pervasive corruption in SSA, stimulate managers to regard paying bribes to officials as kickbacks to the costs of contributing to public goods. Informal payments to government officials as speed money provides the possibility for firms to access the required resources and accelerate their business process in order to reach a competitive advantage compared to their rivals. This corrupt deal with government officials will play a complementary role for the firm's contributions to public goods, which enable the firm to enjoy more government services and permission concluding in more state-owned resources. As a result, I examined the relationship between a firm's contributing to public goods and its corrupt activities, which had been overlooked, contrary to prior studies that stressed the effect of contributing to public goods on firm performance (Lin et al., 2015; Hillman, Zardkoohi, & Bierman, 1999) or recommended avoiding this involvement in public projects amongst firms to battle against corruption, particularly in developed economies (Branco, & Delgado, 2012). Policymakers and scholars

believe that development programs for corporate social responsibility in emerging and advanced economies not only encourage firms to invest in public projects but also reduces the propensity of firms to commit socially irresponsible corporate practices (Lawton et al., 2013). As a result, my study underlines the applicability of contribution to public goods in different cultural, political, geographical, industrial, and environmental conditions, and finds different applicability of such a contribution in SSA compared to developed economies and emerging economies. My findings show that such public good provision enhances motivation and capabilities to access vital resources by engaging in bribery in a broad scope of operational activities, thereby resulting in a higher amount of total bribes in the setting of SSA. Owing to resource constraints, not only do firms in Africa use their whole capacity and various non-market strategies concurrently, but also governments depend on firms to further their public projects and political goals. Furthermore, government officers demand bribes from firms to compensate for their low wages and high workloads due to low-budget issues in the context of LDEs.

Our findings may be of interest and use to policymakers interested in formulating and executing more effective anti-corruption initiatives. Although policymakers encourage firms to contribute to public goods and development programs to promulgate anti-corruption norms, thereby thwarting corrupt behaviors (Rodriguez et al., 2006), this mechanism needs to be re-examined in the context of LDEs, particularly in SSA. My research reveals that bribery emerges from the resource constraints and the structures of resource allocation in the context of LDEs. Thus, corruption control policy should move beyond improving the quality of institutions and beyond a focus on officials who demand bribes. Policymakers should consider managers who supply bribes, middlemen who grease the wheels of bribery, and government allocative systems or resources. So long as policymakers and reformers fail to address the supply-side of bribery, corruption in the context of LDEs is likely to persist. Hence, managers, as deliberately

responsible agents in the persistence of corruption, must be involved in anti-bribery reforms and development plans of the allocation system of resources. Moreover, managers should be aware of the destructive effects of their complementary non-market strategies, contribution to public goods and bribery, to the entrepreneurial environment in the long run, despite their transient successes due to accelerating their business processes. My findings suggest researchers in the context of LDEs, where corruption is prevalent, should examine it from the micro-level perspective, including managers who engage in everyday interaction with government officials. There is a need for further inquiry about whether, and to what extent, other non-market strategies and their interactions play a role in the prolongation of bribery.

As many scholars have attested, networks and associational linkages are essential factors in operating a successful business in Africa (e.g.Biggs, & Shah, 2006). Therefore, I added group affiliation to the catalog of known network mechanisms that facilitate the growth and survival of firms. In this vein, I examined the moderating effect of BGA as a contextual factor which can substitute weak infrastructure and resource scarcity in the context of LDEs, particularly in SSA. My findings reveal that affiliated firms budget fewer bribes than independent firms. In other words, BGA undermines the complementary effect of bribery for a firm's contributions to public goods. Further, the governments in the context of LDEs, largely benefit from the resource and capabilities of large firms and business groups to conduct government projects (e.g., Khanna, & Yafeh, 2007). This government-BG relationship allows the affiliates to encounter less need for engaging in corrupt activities for accessing government goods and services.

African scholarship has emphasized that smaller firms may (as are the majority in SSA) solve market failure problems and resource constraints by creating private governance systems in the form of long-term business relationships in ethnically-based groups (Biggs, & Shah, 2006; Fafchamps, 2004). Their ethnic groups are able to play the role of a connector to establish

relationships with government officials controlling the resources. I suggest further research on explaining the role of the African BG, and its ethnic identity, in accessing resources and enabling entrepreneurial activity by drawing upon the political economy literature, because political economists are particularly sensitive to the role of ethnicity (Fafchamps, 2004). Furthermore, BGs benefit from their links with the government and their contribution to public projects in order to modify the rules in their affiliate's favor (Khanna & Yafeh, 2007). We, therefore, expect to observe BGA more involved in grand corruption rather than petty corruption, which needs further research.

4.11. LIMITATIONS AND FUTURE RESEARCH

Despite conducting a cross-country study on SSA, this study suffers from limitations deriving from my WBES data, regarding the structure, origins, and functioning of BGs and their affiliates, and the measurement of contributing to public goods. WBES data only allow us to use the firm's contribution to HIV/AIDS programs as a proxy for contributing to public goods. Although investment in health programs is an essential representative of public good provision practice of firms, particularly in SSA, there are other public projects in line for a firm's contributions such as transportation, education, etc. WBES data also establishes that affiliated firms are legally independent entities with substantial autonomy over financial and managerial decisions, but which are also self-identified as affiliates of a larger enterprise. However, these data do not provide a fine-grained insight into the nature of their formation, nor the underlying basis for member trust with other group affiliates.

The deterrent role of contributing to public goods in bribery presents a challenge for future across-region research. Political science and sociology enable researchers to elaborate the possible differences amongst developed, emerging, and less developed economies regarding their

interaction mechanism of non-market strategies. Scholars can look more closely at political risks, national political structures. and cultures, to consider how specific organizational aspects of political systems interact with corporate activities. Remaining current with the latest events in the business-government relationship is a challenge for corporate activities and management, and corporate political activity scholars. More specifically, future studies require extended knowledge regarding the role of non-market strategies on the formulation of corporate political activities in SSA compared to the formulation proposed by Hillman and Hitt (1999). Additionally, in defining the non-market strategies of firms and their prevalence, researchers should be able to look at the differences between various contexts and domestic vs. international markets. Future scholars, therefore, need to conduct further studies in explaining the role of non-market strategies in other economies in the context of LDEs.

CHAPTER 5

5. CONCLUSION

Institutional voids and resource scarcity are identified as the greatest challenge to businesses in Africa, where firms require implementing market and non-market strategies for navigating those shortcomings. The first essay shows that BGs represents an organizing mechanism for navigating institutional voids by channeling resources to small affiliates and helping them improve their export intensity. The mechanism shows an indirect catering to small affiliates by BGs to improve their export performance. BGs improve a firm's access to information technology, qualified human resources, and formal credit, and further, that these resources improve affiliated firms' export performance.

We argued that the axis of trust and affiliation for BG formation is ethnic identity in Africa according to prior studies (e.t. Biggs & Shah, 2006; Fafchamps, 2004). However, the research from economic and social development suggests BGs may create a lock-in effect that reduces society's ability to develop efficient market supporting institutions. Therefore, I extended this line of research question by addressing the role of ethnic groups to attain a more precise image of BGs supportive mechanism. The second essay indicates the role of foreign-ethnic business groups, such as Chinese, Indian, Lebanese, European business groups, in improving the international competitiveness of their affiliates vs indigenous affiliates. The foreign ethnic groups may outperform the indigenous affiliates due to their connection with their home countries. For instance, over the past decade China has become Africa's largest trading partner and a source of significant FDI. I found that group affiliation heterogeneously affects their international competitiveness in Africa. Affiliates owned by Indian, Middle Eastern, and European entrepreneurs show no significant difference from indigenous African

owned firms in terms of their international competitiveness. To explain the noted outcome, I argued that these ethnic groups are established in Africa for the long-term, which results in their stagnating and becoming less innovative. Further, the African context is changing, and ethnic identity is no longer the basis for within-group trust, and there is more possible emergence of organic solidarity and a hopeful trajectory of inclusive market construction. In contrast, I find that Chinese owners of group affiliated firms significantly outperform both independent firms and other BG affiliates with non-Chinese owners. I suggest that the appearance and evident competitiveness of these groups is a product of political and economic developments beyond Africa. Whether or not the continuing rise of China and the internationalization of firms from China will have comparable effects in other regions, such as Latin America and Central Asia, also appears to be a fruitful avenue for future research for international business scholars.

Finally, the last essay discusses the resource constraints of firms as another extremely crucial challenge in Africa. Firms in less developed economies depend on external resources, particularly state-owned resources. The non-market strategies are mostly implemented by firms in such a context for accessing state-owned resources. Therefore, this rationality of LDEs' firms resource dependency in using the non-market strategies can change the conventional assumptions. Two dominant non-market strategies, contributing to public goods and engaging in corruption, in the context of Sub-Saharan African firms, show identical logic and direction, meaning that SSA firms contributing to public goods are involved in more corrupt activities and pay more bribes to officials. Accordingly, the firms will have greater access to state-owned resources, as opposed to firms that contribute to public goods in developed economies, where engagement of firms in public projects encourages them to avoid corrupt activities. The complementary effect of bribery for a firm's contributions to public goods is undermined by

affiliating to BGs since affiliates benefit from the resources belonging the group and its linkages with government.

My thesis sheds some light on the influence of business group affiliation on export performance and non-market strategies of African firms, by drawing attention to the role of ethnicity, but it has certain limitations. First, the WBES data limited this work regarding the structure, origins, and functioning of BGs and their affiliates, and the measurement of contributing to public goods, and ethnic identity. WBES data only allows for the use of the firm's contribution to HIV/AIDS programs as a proxy for contributing to public goods and owner originality to gauge the ethnic identity of the manager. I encourage further research to adopt either a survey or qualitative study, therefore, being able to capture the characters of business groups and their ethnicity, and their contribution to the public projects. Future research also could adopt a longitudinal approach in order to capture the dynamics of the relationship among affiliates and BGs' influence on the domestic and international performance of their affiliates. If ethnic business groups have their limits, it is important to know what factors constrain their ability to extend network benefits. Therefore, it would create a fruitful avenue to capture how entrepreneurs can overcome such rigidities in their business groups. Further, I encourage future research to argue the capabilities of entrepreneurs, to move from the safe networks of ethnicity to non-ethnic networks, in order to reach higher-value, though they may be more vulnerable in the new network due to newness and outsidership. Future studies need to focus on how entrepreneurs develop trust in other ethnic groups or non-ethnic networks. To address this important question, not only do scholars need to explore the firm-level characteristics, but also they should provide a precise image of the countries in Africa in terms of their culture, development of their infrastructures, institutions, and abundance of resources and their availability. Therefore, I

encourage a specific configuration of countries in this region, to elaborate the differences among African countries which enable us to describe the dynamic capabilities of firms for adapting their networking strategy, market and non-market strategies to survive and grow in this underdeveloped region with various fundamental challenges.

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APPENDIX 1: QUESTIONS

	Variable	Questions	Source
DV.	Export Intensity	D3c: what % of establishment's sales were direct exports?	WBES (2015)
INV.	Group Affiliation	B2a: What percent of this firm is owned by each of the following: Private domestic individuals, companies or organizations?[13] A.7 : establishment is part of larger firm?	WBES (2015)
Mediation Variables	ICT	C24a: is the internet used to communicate? C24b: is the internet connection used to order purchases for this establishment? C24c: is the internet connection used to deliver services to your clients? C24d: is internet used to: do research and develop ideas on new products and services? C22a: do you currently communicate with clients and suppliers by e-mail? C22b: do you currently communicate with clients and suppliers via your website?	WBES (2015)
	Skilled Employees	L11a: Number full time product employees received formal training in last fiscal year? L11b: Number full time non-production employees received formal training in last fiscal year?	WBES (2015)
	Formal credit	K3bc: Borrowed from banks: private and state-owned* K3e: Borrowed from non-bank financial institutions which include microfinance institutions, credit cooperatives, credit unions, or finance companies. *	WBES (2015)
	Informal Credit	K3f: Purchases on credit from suppliers and advances from customers* K3hd: Other, moneylender, friends, relatives, etc.*	WBES (2015)
Control Variables	Firm size	L.1At the end of fiscal year, how many permanent, full-time employees did this establishment employ? 1= Small>5 and <=49; 2= Medium=50 and <=249; 3= Large>=250	WBES (2015)
	Business Sector	A.4: Surveys are stratified by business sector. Textiles, Leather, Garments, Food, Metals and machinery, Electronics, Chemicals and pharmaceuticals, Wood and furniture, Non-metallic and plastic materials, Auto and auto components, Other manufacturing, Retail and wholesale trade, Hotels and restaurants, Other services, Other: Construction, Transportation, etc.	WBES (2015)
	Foreign Ownership	B2b. What percentage of this firm is owned by Private foreign individuals, companies or organizations?	WBES (2015)
	Firm Age	Firm age is measured by calculating the number of years between the firms' founding year and the year of its interview.	WBES (2015)
	Country	Nominal variable (33 countries): code of each country	WBES (2015)
	Sea Access	African Nations Categorized by Sea Access: 1=Sea access & 2= Landlocked	THE NEBRASKA ANTHROPOLOGIST**
	Trading across Borders	Distance to frontier (DTF) score for trading across borders (0-100)	DOING BUSINESS 2015
	Getting Credit	Distance to frontier (DTF) score for getting credit (0-100)	DOING BUSINESS 2015
	Technology Availability	Availability of latest technologies: In your country, to what extent are the latest technologies available? [1 = not at all; 7 = to a great extent]	The Global Competitiveness Report (2015-2016)***
	Education System	Quality of the education system: In your country, how well does the education system meet the needs of a competitive economy? [1 = not well at all; 7 = extremely well]	The Global Competitiveness Report (2015-2016)***

*Over fiscal year, please estimate the proportion of this establishment's working capital that was financed from each of the following sources?
** Tiffany Napier (2011)
*** Source: World Economic Forum, Executive Opinion Survey. For more details, refer to Chapter 1.3 of this Report

[13] Assuming that a firm is domestically owned if at least 50 % of its ownership belongs private domestic individuals

APPENDIX 2: QUESTIONS

	Variable	Questions	Source
DV.	Bribery Intensity	J7b: It is said that establishments are sometimes required to make gifts or informal payments to public officials to ―get things done‖ with regard to customs, taxes, licenses, regulations, services, etc. On average, what percentage of total annual sales, or estimated total annual value, do establishments like this one pay in informal payments or gifts to public officials for this purpose? d2: Last complete fiscal year's total sales?	WBES (2016)
INV.	Contribution to Public Goods	AFS.4: how much did this establishment spend on all AIDS/HIV programs and activities. d2: Last complete fiscal year's total sales?	WBES (2016)
Moderating V.	Group Affiliation	B2a: What percent of this firm is owned by each of the following: Private domestic individuals, companies or organizations?[14] A.7: establishment is part of a larger firm?	WBES (2016)
Control Variables	Firm size	L.1: At the end of fiscal year, how many permanent, full-time employees did this establishment employ? 1= Small>5 and <=19; 2= Medium=20 and <=99; 3= Large>=100	WBES (2016)
	Business Sector	A.4: Surveys are stratified by the business sector. At a minimum, the stratification delineates between Manufacturing and Services firms. In larger economies, additional sectors are selected for stratification. (Textiles, Leather, Garments, Food, Metals and machinery, Electronics, Chemicals and pharmaceuticals, Wood and furniture, Non-metallic and plastic materials, Auto and auto components, Other manufacturing, Retail and wholesale trade, Hotels and restaurants, Other services, Other: Construction, Transportation, etc.)	WBES (2016)
	Firm Age	Firm age is measured by calculating the number of years between the firm's founding year and the year of its interview.	WBES (2016)
	Private Domestic Ownership	Q.b2a. What percent of this firm is owned by Domestic individuals, companies or organizations:	WBES (2016)
	State-Ownership	Q.b2c: What percent of this firm is owned by government/state	WBES (2016)
	Firm type:	B1: What is this firm's current legal status? Shareholding company with shares trade in the stock market 1 Shareholding company with non-traded shares or shares traded privately 2 Sole proprietorship 3 Partnership 4 Limited partnership 5 OTHER (SPONTANEOUS–SPECIFY) 6	WBES (2016)
	Diversity	D.1a3: What percentage of total sales does the main activity or product represent?	WBES (2016)
	Country	Nominal variable (19 countries): code of each country	WBES (2016)
	Ethnic Fractionalization	Ethno-Linguistic Fractionalization (ELF)	Alesina et al., 2003
Endogeneity	Health - Index	Did this establishment undertake any of the following activities: AFs3a: HIV prevention messages AFs3b: Free condom distribution AFs3c: Anonymous HIV testing AFS.1y: Does this establishment currently have a pre-employment health check for new employees?	WBES (2016)

[14] Assuming that a firm is domestically owned if at least 50% of its ownership belongs to private domestic individuals.